

**The Essential Nutrition Actions:
Findings from the Baseline Surveys of 2003-04
Conducted ESHE II Project Sites in Amhara, Oromia and
SNNPR Regions of Ethiopia**



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Front cover photo by: A. Guyon

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Acronyms

AED	Academy for Educational Development
CFI	Complementary Feeding Index
DHS	Demography and Health Survey
ENA	Essential Nutrition Actions
EOS	Enhanced Outreach Strategy
EEOS	Extended Enhanced Outreach Strategy
ESHE II	Essential Services for Health in Ethiopia, a USAID bilateral project
SNNPR	Southern Nations Nationalities and Peoples Region
USAID	United States Agency for International Development
WHO	World Health Organization

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Executive Summary

Since mid 2003, the USAID funded AED-LINKAGES Project, managed by the Academy for Educational Development (AED), has been working in Ethiopia on the development and implementation of a multi-level, multi-partner country program to support breastfeeding, complementary feeding and maternal nutrition within the context of the Essential Nutrition Actions (ENA) approach through a behavior change communication (BCC) strategy. The major technical areas being addressed by the program are broad and include infant and young child feeding (IYCF), maternal nutrition, nutritional care of the sick child, control of anemia, control of vitamin A deficiency, control of iodine deficiency disorder, as well as support to nutrition in the context of HIV/AIDS, particularly the prevention of Mother to Child Transmission (PMTCT).

In November 2003, USAID/Ethiopia awarded a new five-year bilateral agreement to John Snow International (JSI), titled The Child Health and Health Sector Reform Project, known locally as the "ESHE II" (Essential Services for Health in Ethiopia) Project. JSI, as the prime contractor for the ESHE II bilateral, is responsible for overall management of the project as well as EPI, IMCI, HMIS and logistics. AED is a sub-contactor on the ESHE II team providing leadership for nutrition through the ENA approach, behavior change communication (BCC), as well as community mobilization. ESHE II operates in 64 *woredas* (coverage 15 million) located in the three most populated regions of the country, Amhara (20 *woredas*), Oromia (20 *woredas*) and SNNPR (24 *woredas*).

AED-LINKAGES has been providing support to develop the nutrition and BCC aspects of the ESHE II project at the regional, health facility and community levels. This has included conducting formative research, developing ENA messages, and targeting interventions at health managers, front line workers and community volunteers.

At the beginning of ESHE II, prior to the implementation of any interventions, a series of household baseline surveys were conducted in each region: SNNPR in June 2003, Oromia in May 2004, and Amhara in December 2004. The baseline surveys were conducted in both focus and non-focus ESHE II *woredas*. The analysis contained in this report represents only ESHE II focus *woredas*.

The results of the ESHE II baseline data analysis illustrate that major improvements are needed across all the Essential Nutrition Actions. The findings confirm similar findings observed in the DHS 2000, as well as in AED-LINKAGES' formative research studies. AED-LINKAGES and ESHE II will use the results these baseline surveys to further refine and fine-tune its advocacy as well as field activities.

A summary of the key findings are presented for each of the three regions in the following pages. Focus has been placed on those findings that are the most pressing, including early initiation of breastfeeding, exclusive breastfeeding 0-5 months, continued breastfeeding to 2 years, discouraging bottle use, timely introduction of complementary foods at 6 months, adequate food diversity and quantity, adequate nutritional care of the sick child, as well as nutrition support to pregnant and lactating women.

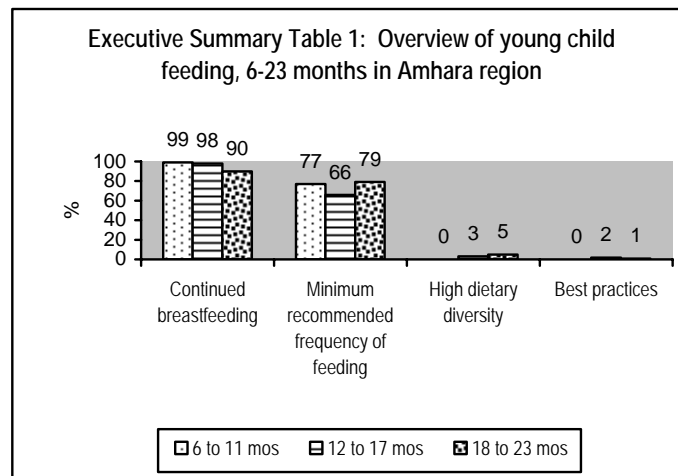
Amhara Region

1. Breastfeeding practices from 0 to 5 months of age are mixed with a very low timely initiation of breastfeeding rate and a very high exclusive breastfeeding rate:

- 23% are put on the breast within one hour of birth
- 57% receive colostrum
- 74% are exclusive breastfeeding, dropping from 87% for infants 0-1 month to 56% for those 4 to 5 months of age.

2. Complementary feeding, along with continued breastfeeding 6 to 23 months of age, is extremely inadequate for the great majority of children as:

- even by 10 months of age only 43% receive complementary foods in addition to breast milk even by 10 months of age
- a major problem is low dietary diversity across all age groups, as well as inadequate feeding frequency (see table below).



- 5% are fed with a bottle
- 66% of mothers wash hands before feeding their children, although the use of soap is not known

3. The nutritional care of the sick child is also inadequate as almost no children receive additional food during illness, and only half of them receive additional foods after illness.

- During an illness,
 - 0% of children 0-5 months are breastfeed more than usual
 - 6% of children 6-23 months are breastfeed more than usual and only 4% of mothers feed complementary foods more than usual
- After an illness,
 - 24% of children 0-5 months are breastfeed more than usual
 - 13% of children 6-23 months are breastfeed more than usual and 16% of mothers feed complementary foods more than usual.

4. The vitamin A program needs strengthening for both children and women as only:

- 8% of children receive vitamin A supplements.
- 11% eat foods rich in vitamin A .
- 2% of post-partum women receive vitamin A supplements.

5. Activities to control of anemia are also inadequate, with an important opportunity being missed to give iron/folate supplementation during pregnancy, since:

- out of the 45% of women reporting they had attended an ante-natal clinic during their last pregnancy, only 8% has been given iron/folate; this represents only 17% of all pregnant women actually receiving iron/folate during pregnancy.
- 5% of children age 0-23 months sleep under an ITN the night before.
- de-worming was not assessed in the baseline

6. More work is needed to promote women's nutrition, as maternal feeding practices during pregnancy and lactation are inadequate:

- only 11% of women received advice on nutrition at least once during their last pregnancy.
- upwards to 47% of pregnant women eat less than usual
- only 34% of lactating women eat more than usual

7. Levels of malnutrition in children 6-23 months are high, no doubt the result of inadequate feeding practices and high rates of childhood illness (up to 38% of children were reported to be ill during the 2 weeks prior to the survey):

- 11% of children are wasted (low weight for height, a measure of acute malnutrition)
- 42% are underweight (low weight for age)
- 46% are stunted (low height for age, a measure of chronic malnutrition)

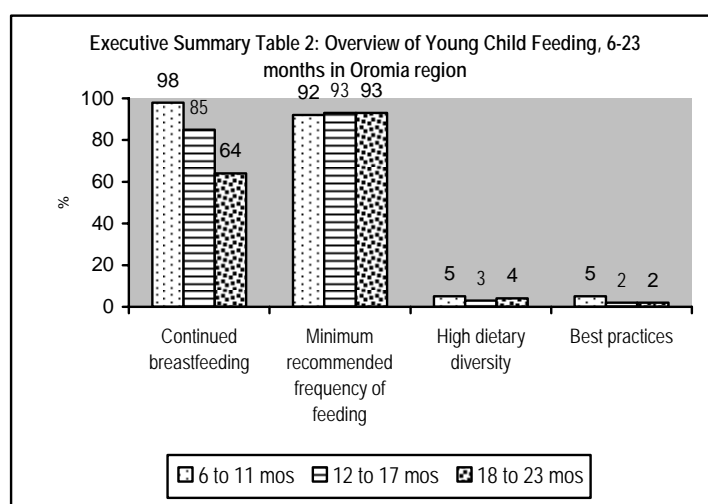
Oromia Region

1. Breastfeeding 0-5 months of age is sub-optimal as:

- only 43% are put on the breast within one hour of birth
- only 62% receive colostrum
- only 39% are exclusively breastfed; this rate drops from 54% in infants 0-1 month of age to 21% in infants 4-5 months of age.

2. Complementary feeding along with continued breastfeeding from 6-23 months of age is inadequate for the great majority of children as:

- only 40% receive complementary foods in addition to breast milk by 10 months of age
- a major problem is low dietary diversity, as is the sudden drop in children 18-23 months breastfeeding (see table below).



- 27% of infants 6-23 months are bottle fed
- 64% of mothers wash hands before feeding their children, although the use of soap is not known

3. The nutritional care of sick children is also inadequate as most children don't receive additional food during illness and only half of them receive additional foods after illness.

- During an illness,
 - 6% of children 0-5 months are breastfed more than usual
 - 5% of children 6-23 months are breastfed more than usual and only
 - 6% of mothers feed complementary foods more than usual
- After an illness,
 - 30% of children 0-5 months are breastfed more than usual
 - 45% of children 6-23 months are breastfed more than usual and
 - 41% of mothers feed complementary foods more than usual.

4. The vitamin A program needs strengthening for both children and women as only:

- 40% of children receive vitamin A supplements (through a recent measles campaign)
- 10% eat foods rich in vitamin A .
- 8% of post-partum women receive vitamin A supplements.

5. Activities to control of anemia are also inadequate, with an important opportunity being missed to give iron/folate supplementation during pregnancy, since:

- of the 28% of pregnant women attending ante-natal clinics, only 20% are given iron/folate, resulting in only 6% of all pregnant women actually receiving iron/folate during their last pregnancy.
- only 2% of children age 0-23 months sleep under an ITN the night before.
- de-worming was not assessed

6. More work is needed to promote women's nutrition, as maternal feeding practices during pregnancy and lactation are inadequate:

- only 30% of women receive advice on nutrition at least once during their last pregnancy.
- up to 51% of pregnant women eat less than usual
- only 56% of lactating women eat more than usual

7. Levels of malnutrition in children 6-23 months are high, no doubt the result of inadequate feeding practices and high rates of childhood illness (up to 36% of children were reported to be ill during the 2 weeks prior to the survey

- 14% of children are wasted (low weight for height, a measure of acute malnutrition)
- 37% are underweight (low weight for age)
- 30% are stunted (low height for age, a measure of chronic malnutrition nutrition)

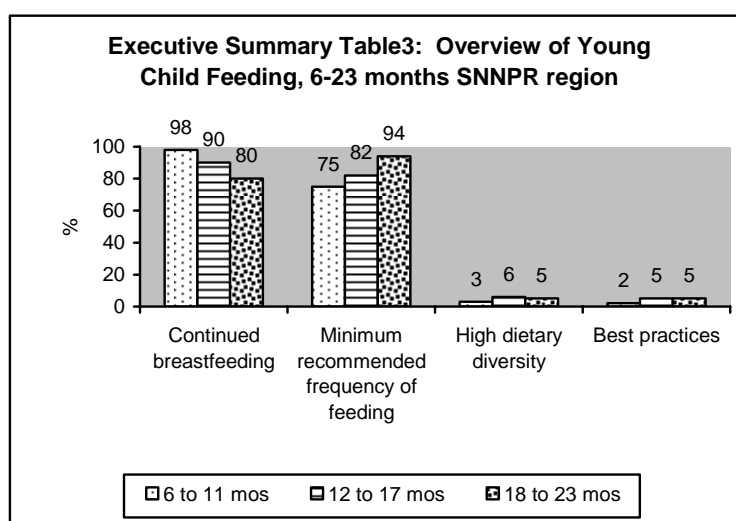
SNNPR Region

1. Breastfeeding 0-5 months of age is sub-optimal for many of the children as:

- only 45% are put on the breast within one hour of birth
- only 35% receive the colostrum
- 58% are exclusive breastfeeding; this rate drops from 81% for infants 0-1 month to 40% for infants 4-5 months of age.

2. Complementary feeding along with continued breastfeeding 6-23 months of age is inadequate for the great majority of children as:

- only 62% receive complementary foods in addition to breast milk by 10 months of age
- a major problem is dietary diversity, as well as discontinued breastfeeding in children 18 months and older (see table below).



- 18% of children 6-23 months are bottle fed
- 86% of mothers wash hands before feeding their children, although the use of soap is not known.

3. The nutritional care of the sick child is inadequate as most children don't receive additional food during illness and only half of them receive additional foods after illness.

- During an illness,
 - 4% of children 0-5 months are breastfeed more than usual
 - 5% of children 6-23 months are breastfeed more than usual and only 2% of mothers feed complementary foods more than usual
- After an illness,
 - 26% of children 0-5 months are breastfeed more than usual
 - 42% of children 6-23 months are breastfeed more than usual and 42% of mothers feed complementary foods more than usual.

4. The vitamin A program needs strengthening for both children and women as only:

- 14% of children receive vitamin A supplements.
- 27% eat foods rich in vitamin A .
- 4% of post-partum women receive vitamin A supplements.

5. Activities to control of anemia are also inadequate, with an important opportunity being missed to give iron/folate supplementation during pregnancy, since:

- 48% of pregnant women attend ante-natal clinics, yet only 27% are given iron/folate, resulting in only 13% of all pregnant women actually receiving iron/folate during their last pregnancy.
- less than 1% of children age 0-23 months sleep under an ITN the night before.
- De-worming is not assessed

6. More work is needed to promote women's nutrition, as maternal feeding practices during pregnancy and lactation are inadequate:

- only 28% of women receive advice on nutrition at least once during their last pregnancy.
- up to 56% of pregnant women eat less than usual
- only 45% of lactating women eat more than usual

7. Levels of malnutrition in children 6-23 months are high, no doubt the result of inadequate feeding practices and high rates of childhood illness (up to 43% of children were reported to be ill during the 2 weeks prior to the survey:

- 11% of children are wasted (low weight for height, a measure of acute malnutrition)
- 34% are underweight (low weight for age)
- 43% are stunted (low height for age, a measure of chronic malnutrition)

A. Introduction

1. Background on AED-LINKAGES and the ESHE Project

Since 2002, the USAID funded AED-LINKAGES Project, managed by the Academy for Educational Development (AED), has been working in Ethiopia on the development and implementation of a multi-level, multi-partner country program to support breastfeeding, complementary feeding and maternal nutrition within the context of the Essential Nutrition Actions (ENA) approach (see Box 1) through a behavior change communication (BCC) strategy. The major technical areas being addressed by the program are broad and include infant and young child feeding (IYCF), maternal nutrition, nutrition care of the sick child, prevention of Mother to Child Transmission (PMTCT) of HIV and AIDS, and other ENA behaviors.

Box 1: The Federal MOH in Ethiopia has adopted the Essential Nutrition Actions (ENA) approach to address malnutrition in women and children under two years of age. This approach uses multiple program opportunities to promote the following 7 key nutrition behaviors that are 'do-able' and scientifically proven to improve nutrition:

- 1) optimal breastfeeding during the first six months;
- 2) appropriate complementary feeding beginning at six months with continued breastfeeding to two years and beyond;
- 3) optimal feeding of the child during and after illness;
- 4) prevention of vitamin A deficiency (breastfeeding, consumption of fortified and vitamin A-rich foods, maternal and child supplementation 6-59 months);
- 5) prevention of anemia (maternal and child iron supplementation, deworming, malaria control, consumption of fortified and iron-rich foods);
- 6) promotion of iodized salt consumption by all families; and
- 7) promotion of improved women's nutrition (increased food intake during pregnancy and lactation, iron/folic acid supplementation, treatment and prevention of malaria, de-worming during pregnancy, postpartum vitamin A supplementation)

These seven actions are promoted through multiple program opportunities during six life cycle contact points which include during pregnancy, at delivery and immediate postpartum, postnatal and family planning, as well as during immunization, growth monitoring/well child, and sick child contacts. Outside the health sector, the seven ENAs can be promoted and implemented through community, school, emergency, agriculture and micro-credit programs.

In November 2003, USAID/Ethiopia awarded a new five-year bilateral agreement to John Snow International (JSI), entitled The Child Health and Health Sector Reform Project but known locally as the "ESHE II" (Essential Services for Health in Ethiopia) Project. JSI, as the prime contractor for the bilateral, is responsible for overall management of the Project as well as EPI, IMCI, HMIS and logistics. AED is a sub-contactor on the ESHE II team providing the technical lead on behavior change communication across all technical areas, as well as in the area of nutrition through the ENA approach. ESHE II is intended to operate in 64 *woredas* (coverage 15 million) located in the three most populated regions of the country, Amhara (20 *woredas*), Oromia (20 *woredas*) and SNNPR (24 *woredas*).

From the beginning, AED-LINKAGES has been providing support to develop the nutrition aspects of the ESHE II project, at the regional, health facility and community levels mainly through training in ENA and behavior change communication targeted at managers, different cadres of service providers and community workers, including health workers, health service extension agents, and community volunteers (see Box 2). In the early phases of its work in Ethiopia, AED-LINKAGES carried out a

number of formative research studies across different regions in the country to study infant and young child feeding practices, as well as women's nutrition practices. The findings from these studies were used to develop key ENA messages that target small do-able behaviors known to make a positive difference for infant, young child and women's nutrition.

Box2:

Training courses: Following the baseline surveys, AED-LINKAGES began to assist ESHE to train health workers and community volunteers in the three focus regions using the following ENA training modules and IEC tools:

- ENA Technical course (4 days): training focuses on nutrition advocacy for managers and decision makers;
- ENA Counselors' Guide course (4 days): training focuses on knowledge and counseling skills for bringing about nutrition behavior change and covers breastfeeding and complementary feeding only) for zonal and *woreda* managers, health workers and deployed health extension workers;
- Community Health Promoters Training Modules: Breastfeeding and vitamin A in the first training module along with immunization and hygiene, and complementary feeding in the second training module along with management of childhood illnesses;
- ENA for Community Nutrition Promoters: training is a simplified version of the ENA BCC course which is specially targeted at illiterate community workers, and is given in two modules: Module I focuses on IYCF and Module II focuses on other aspects of ENA as well as neonatal health.
- Family Health Card: contains key ENA messages and other child survival messages, and is the main BCC tool used in all ESHE training courses.

Both the AED-LINKAGES and ESHE II projects use behavior change approaches to improve child health and nutrition, in addition to related maternal health issues. This is accomplished through a combination of capacity building and training, and the promotion of appropriate key messages developed for a diverse array of target groups.

ENA training in ESHE II project areas did not begin until after the baseline surveys had been carried out. Hence the data presented in this report represent existing baseline nutrition practices at the community level prior to the initiation of any AED-LINKAGES or ESHE II supported nutrition interventions.

In addition AED-LINKAGES also supports interventions at multiple levels through a wide network of partner groups including government, universities, other donors as well as non-governmental organizations. For example, during the same period of time the MOH, with the support of UNICEF, initiated the Enhanced Outreach Strategy (EOS) that provides every six months vitamin A supplementation, de-worming for children as well as screening for acute malnutrition. Similarly the Extended Enhanced Outreach Strategy (EEOS) was launched to extend vitamin A supplementation and de-worming to children across the entire country.

AED-LINKAGES also supported the creation of an enhanced policy environment for child health and nutrition through advocacy as well as improved pre-service and in-service training in the area of nutrition.

2. Baseline Methodology

Organization of field work.

At the beginning of ESHE II, a series of household baseline surveys were conducted in each region: SNNPR in June 2003, Oromia in May 2004, and Amhara in December 2004¹. It should be noted that the baseline surveys were conducted in both focus and non-focus ESHE II *woredas*. The analysis contained in this report is only based on data from ESHE II focus *woredas*. The fieldwork was carried out by three regional enumeration teams, each team consisting of one field supervisor and four enumerators. Supervisors and enumerators were selected from health professionals either working for regional health bureaus or from the ESHE project itself. Generally in each region training of the entire enumeration staff lasted for a total of 6 days. Testing and revision of the questionnaires was conducted during the training of interview teams. The training course consisted of instruction in interviewing techniques and field procedures for the survey, a detailed review of each item in the questionnaires, instruction and practice in weighing and measuring of children, mock interviews between participants in the class room and practice interviews in the field. In addition, a separate training session was arranged for supervisors and survey coordinators, which focused on the organization of the fieldwork as well as methods of detecting errors in the field and in the filled-in questionnaires. Throughout the survey, regional ESHE project staff served as survey coordinators and maintained close contact with all the teams through direct communication and spot-checking. The objective was to provide support and advice to staff in the field and to ensure data quality and the efficiency of interviewers. Questionnaires were in Amharic and administered in the local language if different (e.g. Oromiffa). In this case interviewers agreed upon common terms and regional language variations so that questions were administered in a standardized manner.

Target groups, around which the questionnaires were based, consisted of women of childbearing age, women with infants from 0-11 months of age, and women with children from 12-23 months of age. A wide range of data were collected on child survival, nutrition, and other related topics including women's health. Questionnaires were mostly the same across all regions, however, there were instances when specific questions were asked differently in each region. Attempts have been made to standardize these inconsistencies in the analysis that follows.

Sampling *Kebele* population lists were used from the 1994 census to construct sampling frames, from which interview clusters were selected with probability proportional to size (PPS) of the *kebele's* population. The baseline surveys were conducted in accordance with WHO's Expanded Program on Immunizations two-stage cluster survey methodology. Each survey area contained 30 clusters of 10 respondents of each target group.

After all clusters had been selected, interview teams used a random walk procedure to locate households for interviews. Teams would first locate the center of the *kebele* with the help of the local population, and then choose a random starting direction. The first five houses in the designated direction were bypassed and interviews conducted at consecutive households until the team completed the required number of interviews. If due to difficulties, one cluster had to be exchanged with another from the same *woreda*, the new cluster was selected randomly among those remaining in the *woreda*. The data were cleaned and analyzed using the Statistical Package for Social Sciences (SPSS).

¹ "Twelve baseline health surveys report conducted in the three regions: Amhara, Oromia and the SNNPR, March 2005, Addis Ababa."

Table 1: Distribution of the sample of children in ESHE project areas, by age, sex and region

Age in months	SNNPR			Amhara			Oromia		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-5	110	111	221	98	97	195	85	68	153
6-11	118	89	207	53	64	117	71	75	146
12-17	137	121	258	69	81	150	76	65	141
18-23	85	81	166	69	67	136	86	70	156
Total	450	402	852	289	309	598	318	278	596

3. Objective of the Analysis

The primary objective of the analysis contained in this report is to assess and analyze complementary feeding practices, particularly testing out new types of indicators and composite indices in order to do so. It is accepted that measuring the adequacy of complementary feeding practices is very challenging. International experts have been trying to devise a measurement strategy to capture in one index key elements related to complementary feeding practices. Using extant Demographic Health Survey data sets from around the world, including Ethiopia², Arimond and Ruel (2003) have recommended a model to calculate a composite young 'child feeding index' (CFI) that captures three critical elements of complementary feeding of children from 6 to 23 months, namely:

- Continued breastfeeding from 6 to 23 months
- Age-appropriate frequency of feeding
- Dietary diversity.

The CFI scoring method, as described by Arimond and Ruel (2003) and in more detail later in Section 2.5, is an attempt to assess complementary feeding practices in a practical manner suitable for large surveys. One limitation is that it only provides an indirect assessment as it is not based on any quantitative measurement. It is also recognized that the CFI approach is still new and needs further refinement based on field experiences. Thus the data provided in this baseline survey will allow an opportunity for such testing, as well as will provide baseline data against which future comparisons can be made to track progress over time in improving complementary feeding practices.

The second objective of this data analysis is to compile baseline values of key ENA indicators, particularly related to infant and young child feeding, that relate to AED-LINKAGES support in the ESHE II project areas. Baseline levels for these indicators will be used later as a means by which progress in achieving positive behavior change can be measured in future surveys, including the AED-

² Arimond, M., and M. T. Ruel. *Progress in Developing an Infant and Child Feeding Index: An Example Using the Ethiopia Demographic and Health Survey 2000*. Food Consumption and Nutrition Division Discussion Paper #143. Washington, D.C.: International Food Policy Research Institute, 2002.

LINKAGES end-line survey planned for May/June 2006 as well as for the ESHE II end-line to be carried out in 2008.

The data collected during the baseline surveys focused primarily on practices related to breastfeeding in infants 0-5 months of age, feeding children 6-23 months of age, the nutritional care of sick children, women's nutrition, control of vitamin A deficiency as well as the control of anemia. The issues of iodine deficiency and de-worming could not be assessed as these were not included in the ESHE II baseline surveys.

B. Results

The results of the data analysis are presented in the following sections. The calculation of the infant and young child feeding indicators follow the internationally accepted definitions shown in Annex 1. In each section below the key ENA messages now being promoted are first presented, followed by the data that describe the baseline levels for each of the practices.

1. Breastfeeding of children 0-5 months

Optimal breastfeeding is recognized by international health experts as a key child survival intervention. With near to universal coverage, global estimates show that optimal breastfeeding could avert upwards to 13 to 15 percent of all under-five deaths³. In Ethiopia, the 2004 Child Survival Strategy document assessed the possible decrease to be 4 percent. Early and exclusive breastfeeding has also been identified as one of the key interventions to save newborn lives.

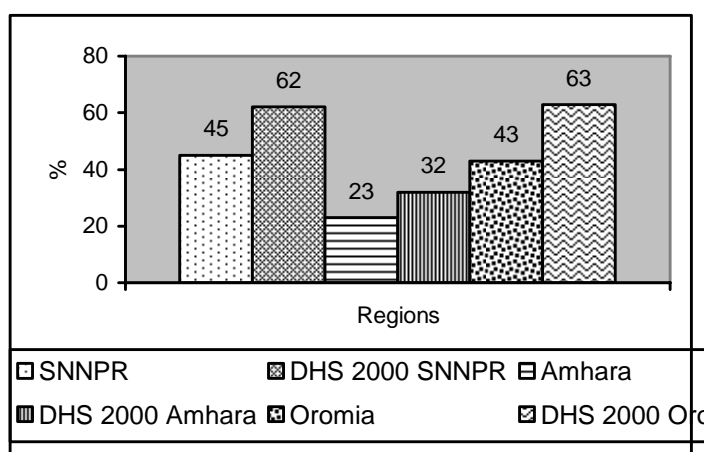
1.1 Timely Initiation of Breastfeeding Within 1 Hour of Birth

ENA Message

Put your baby on the breast immediately after birth, even before the placenta is expelled, to stimulate your production of milk.

Inadequate practices are found across the 3 regions as shown in Graph 1. For mothers with infants 0-11 months of age, only 23%, 43% and 45% put their newborns to their breast within 1 hour of birth in Amhara, Oromia, and SNNPR, respectively. The DHS also collected similar data, however included recall data from mothers with children 0-59 months, whereas in ESHE the recall data were from mothers with infants 0-11 months. Thus, comparisons of DHS 2000 data to ESHE II project site data are difficult to make. As can be see, in all three regions, the ESHE II baseline figures for early initiation were lower than the regional DHS figures.

Graph 1: Percent of newborns put to breast within 1 hour of birth, by region for ESHE II baseline and DHS surveys (ESHE II: mothers with infants 0-11 months; DHS: mothers with infants 0-59 months)



Region	%	N
SNNPR	45	396
DHS 2000 SNNPR	62	2,602
Amhara	23	300
DHS 2000 Amhara	32	3,202
Oromia	43	300
DHS 2000 Oromia	63	4,997

³ Jones G, Steketee RW, Black RE, Bhutta AZ, Morris SS, the Bellagio Child Survival Study Group. How many child deaths can we prevent this year? *Lancet*. 2003;362:65-71.

² Many missing values were found for Amhara region

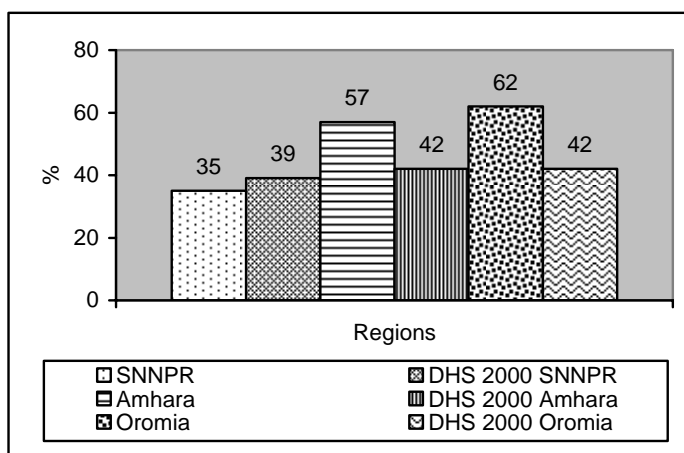
1.2 Giving colostrum

ENA Message

Give the first yellow milk made especially for the new born
as it will protect your baby from illness

Colostrum contains protective antibodies and is important for the newborn by serving as the baby's 'first immunization'. Graph 2 shows the percentage of infants given colostrum in ESHE II sites as compared to the regional DHS 2000 data. Only 35% of infants received colostrum in SNNPR, 57% in Amhara, and 62% in Oromia.

Graph 2: Percent of newborns given colostrum by region (recall from mothers with infants 0-11 months)



Region	%	N
SNNPR	35	428
DHS 2000 SNNPR	39	2,602
Amhara	57	300
DHS 2000 Amhara	42	3,202
Oromia	62	299
DHS 2000 Oromia	42	4,997

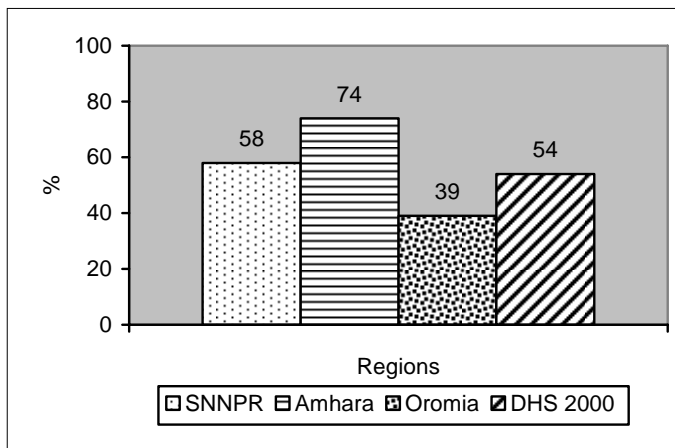
1.3 Exclusive Breastfeeding

ENA Message

Feed your baby only breast milk for the first six months,
not even giving water, for it to grow healthy and strong

As shown in Graph 3, the exclusive breast feeding rate for Oromia is low at 39%, followed by SNNPR at 58%, however in Amhara it is very high at 74%. The national exclusive breastfeeding rate from the DHS 2000 is 54%. Apart from Amhara, the rates of exclusive breastfeeding during the first 6 months of life are inadequate.

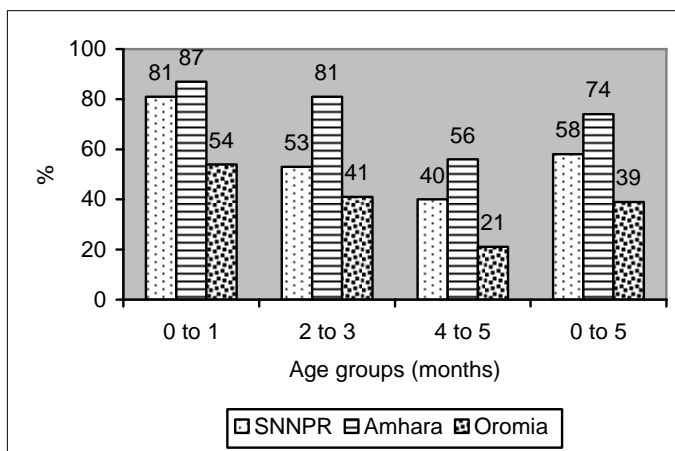
Graph 3: Percent of infants exclusively breastfed, by region (24 hour recall from mothers with infants 0-5 months)



Region	%	N
SNNPR	58	221
Amhara	74	195
Oromia	39	153
DHS 2000	54	1,078

As can be seen in Graph 4 below, in all three regions a drop in exclusive breastfeeding is evident starting at the beginning of the second month of life, with this being most pronounced in SNNPR and Oromia. By 4-5 months, only 21%, 40% and 56% of infants in Oromia, SNNPR and Amhara, respectively, are still exclusively breastfed.

Graph 4: Exclusive breastfeeding by age in months (24 hour recall from mothers with infants 0-5 months)



Region	0-1 mos %	2-3 mos %	4-5 mos %	0-5 mos % (N)
SNNPR	81	53	40	58 (221)
Amhara	87	81	56	74 (195)
Oromia	54	41	21	39 (153)

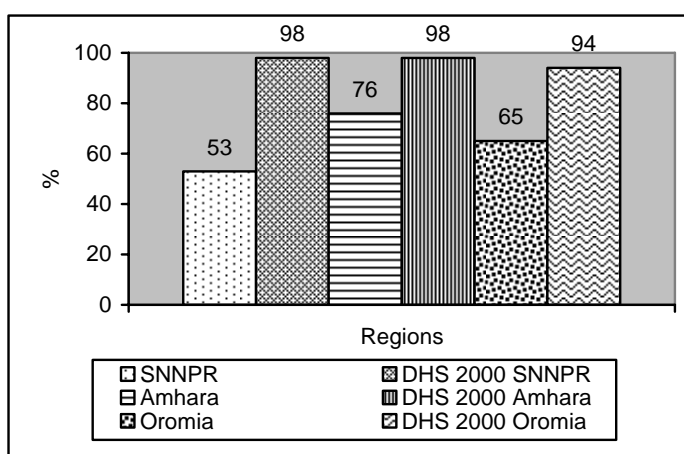
1.4 Frequency of breastfeeding

ENA Message

Breast feed your baby on demand, at least 10 times day and night, to produce enough milk and provide your baby enough food to grow healthy

The percentage of mothers reporting breastfeeding their infants less than 6 months at least 10 times each day is 76% in Amhara region, 65% in Oromia, and only 53% in SNNPR. It should be noted that the DHS 2000 data used a cut-off breastfeeding frequency value of 6 or more times as opposed to the LINKAGES/AED recommendation of at least 10 times. This could be the reason why the percentages are higher for the DHS than the survey findings.

Graph 5: Percent of infants 0-5 months given correct number of daily breastfeeds, 10 or greater times, by region



Regions	%	N
SNNPR	53	119
DHS 2000 SNNPR	98	241
Amhara	76	175
DHS 2000 Amhara	98	281
Oromia	65	80
DHS 2000 Oromia	94	421

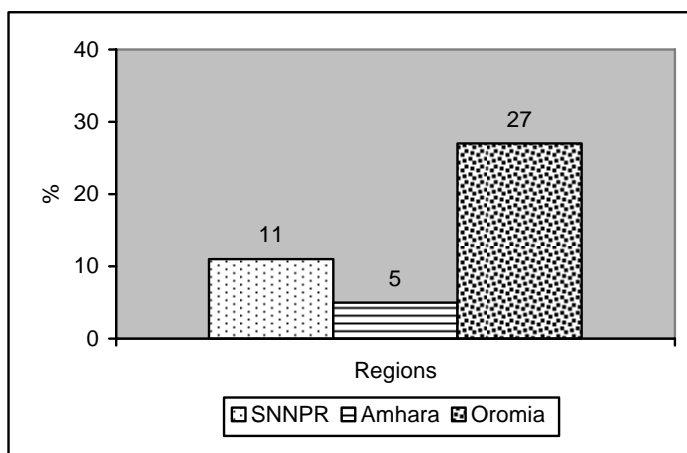
1.5 Bottle feeding

ENA Message

Feed your baby using a clean cup and spoon, never a bottle as this may cause your baby to get diarrhea.

As shown in Graph 6, the use of bottles to feed babies under 6 months is very common. In Oromia, upwards to 27% of infants below 6 months were reported to have been given a bottle during the 24 hours preceding the survey. In SNNPR bottle use was also high at 11% in infants. Amhara has the lowest use of bottles at 5%. Bottles are very hard to keep clean and can easily become contaminated leading to diarrhea and a high risk of mortality.

Graph 6: Percent of infants bottle-fed, by region (24 hour recall from mothers with infants 0-6 months)



Region	0-5 mos %	N
SNNPR	11	221
Amhara	5	195
Oromia	27	153

Conclusion: Breastfeeding practices at baseline are sub-optimal and with wide variations seen between regions.

- Timely initiation of breastfeeding within one hour of birth is very low. SNNPR has the highest rate at only 45% and Amhara the lowest at 23%.
- The practice of giving the newborn colostrum is also not widely prevalent, ranging from only 35% to 62% across the three regions
- Exclusive breastfeeding during the first 6 months varies widely across the regions, with the highest rate found in Amhara (74%), followed by SNNPR (58%) and Oromia (39%).
- In infants 4 to 5 months old, the rate of exclusively breastfeeding drops dramatically, to a level of 21% in Oromia, and 40% and 56% in SNNPR and Amhara, respectively
- Giving infants bottles is a major problem, particularly in Oromia (27%) and SNNPR (11%). The comparative figure in Amhara is 5%.

2. Complementary Feeding with Breastfeeding in Children 6-23 months

In Ethiopia malnutrition begins early on in life and continues to increase progressively up through two years. Much of the onset of malnutrition stems from inappropriate infant feeding practices during the first year of life in combination with weanling infections such as diarrhea brought about by unhygienic food handling. Therefore, improving complementary feeding practices from 6-23 months of age is essential to reduce the high levels of child malnutrition found in the country.

2.1 Timely Complementary Feeding Rate

ENA Message

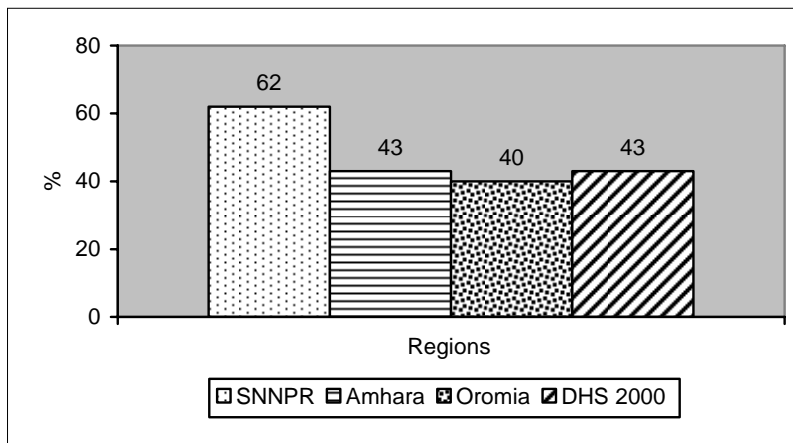
Introduce complementary foods at six months of age, such as soft porridge, 2-3 times a day, for your baby to grow healthy and strong.

It is recommended that complementary foods be introduced starting at 6 months of age as this is an age when nutrients from breast milk are not sufficient to support healthy growth. The 'timely

complementary feeding rate' describes what percent of infants 6-9 months received 'semi-solid or solid foods' in addition to breast milk in the previous 24 hours.

As shown in Graph 7 complementary feeding practices are very inadequate. In Oromia and Amhara only 40% and 43%, respectively, of infants 6-9 months were given complementary foods (defined as solids or semi-solids), as compared to a relatively higher figure of 62% in SNNPR which is still low in absolute terms. This is a time when infants need foods other than breastmilk to maintain health and growth. Undoubtedly this is a major causes of the serious rates of malnutrition seen in young children in Ethiopia. The national timely complementary feeding rate from the DHS 2000 is also very low at 43%, which is comparable to the ESHE II project areas.

Graph 7: Timely Complementary Feeding Rate (24 hour recall from mothers with infants 6-9 months)



Region	%	N
SNNPR	62	145
Amhara	43	84
Oromia	40	94
DHS 2000	43	726

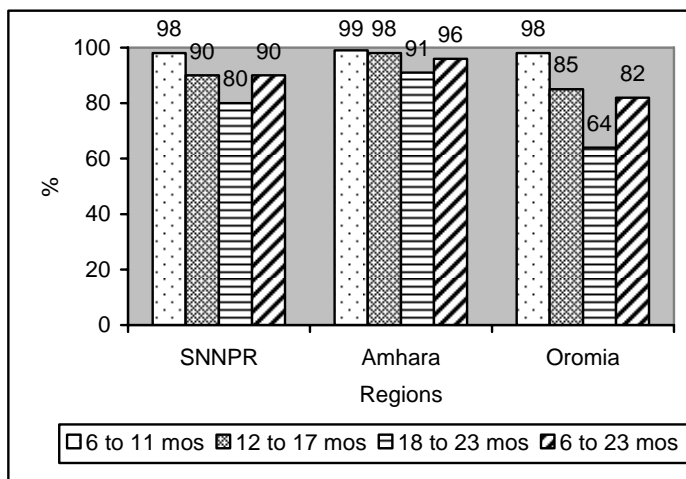
2.2 Continuation of breastfeeding

ENA Message

At 6 months of age, continue to breast feed your child on demand, at least 8 times, day and night, until two years and beyond to maintain its strength.

As seen in Graph 8, the percentage of children 6-23 months still being breastfed decreases with age. DHS 2000 data are not available for comparison. Continuation of breastfeeding was generally high in the three regions in children 6-17 months of age, however, drops off after 18 months, particularly in Oromia region.

Graph 8: Proportion of mothers who are still breastfeeding, by child's age



From Graph 8 above it can be calculated that 18% of mothers in Oromia with children 6-23 months had stopped breastfeeding, as compared to 10% in SNNPR and 4% in Amhara.

Region	Age group (mos)	%	N
SNNPR	6 – 11	98	207
	12 – 17	90	260
	18 – 23	80	166
	6 to 23	90	633
Amhara	6 – 11	99	117
	12 – 17	98	154
	18 – 23	91	109
	6 to 23	96	380
Oromia	6 – 11	98	146
	12 – 17	85	144
	18 - 23	64	156
	6 to 23	82	446

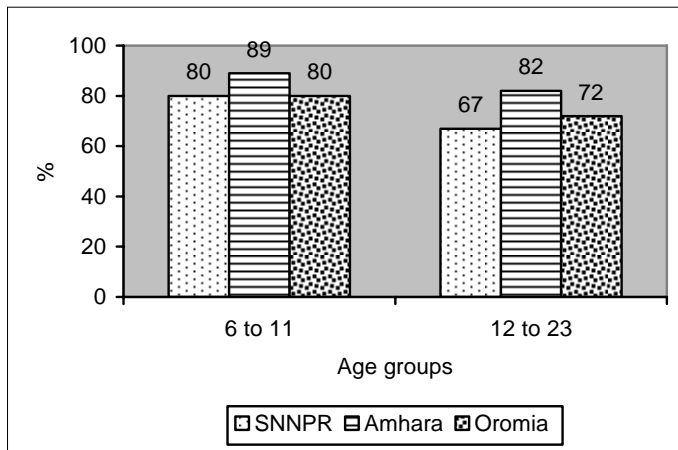
Table 2: Reasons given by mothers for why stopped breastfeeding

Major reason:	%
Mother ill/weak	9
Child ill/weak	3
Nipple/breast problem	3
Not enough milk	4
Mother working	1
Child refused	10
Weaning age/age to stop	11
Mother became pregnant	52
Mother started contraception	1
other	7
Total	100 (N=164)

As shown in Table 2, for those mothers who stopped breastfeeding, it appears that the most commonly cited reason for all regions taken as a whole was that the mother became pregnant (52%), followed by mother thought it was appropriate age to stop (11%), child refused to breastfeed (10%), and mother was too weak to breastfeed (9%).

As indicated in Graph 9, for those children still breastfeeding, the majority of mothers (80% or more) in all three regions are still breastfeeding the recommended number of times, 8 or more each day for infants 6-11 months. However at 12-23 months this drops to about 70% in SNNPR and Oromia, but remains high at over 80% in Amhara. There are no DHS data for comparison purposes.

Graph 9: Correct number of daily breastfeeds (8 or more times) (for mothers with infants 6-23 months)



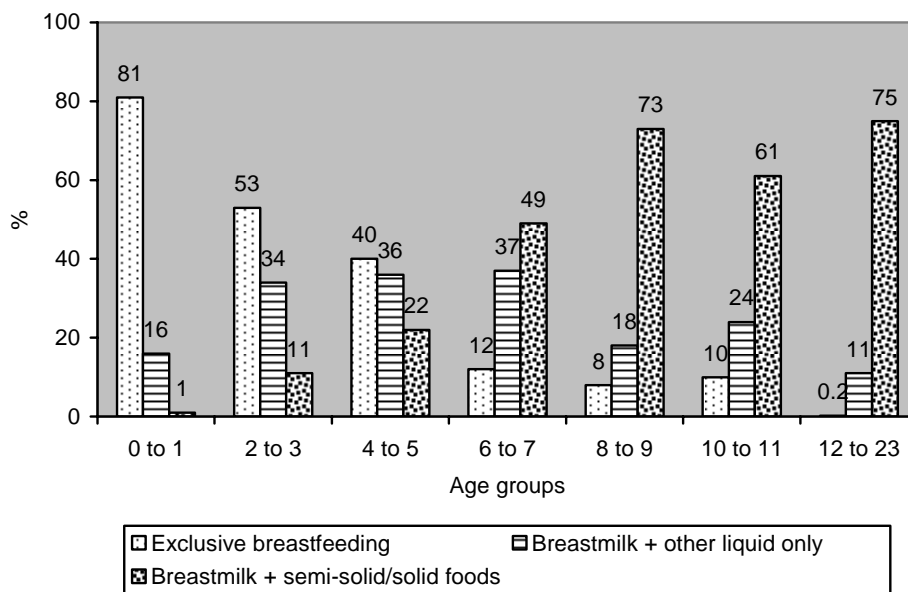
Region	Age groups	%	N
SNNPR	6 - 11	80	96
	12 - 23	67	205
Amhara	6 - 11	89	112
	12 - 23	82	261
Oromia	6 - 11	80	75
	12 - 23	72	123

2.3 Summary of breastfeeding and complementary feeding patterns 0-23 months

Graphs 10 through 12 below, illustrate the overall patterns from birth to 23 months obtained from the 24 hour recall data showing the percentage of children by age who were exclusively breastfed, breastfed with liquids, or breastfed with semi-solids and solid foods.

In SNNPR, 49%, 26% and 34% of infants between 6-7, 8-9, and 10-11 months of age, respectively, are still only receiving either breastmilk alone or with other liquids. Even by 10 months of age, only 61% were receiving complementary foods in addition to breastmilk, meaning that a large proportion of children (nearly 40%) are not receiving the complementary foods necessary to support healthy growth.

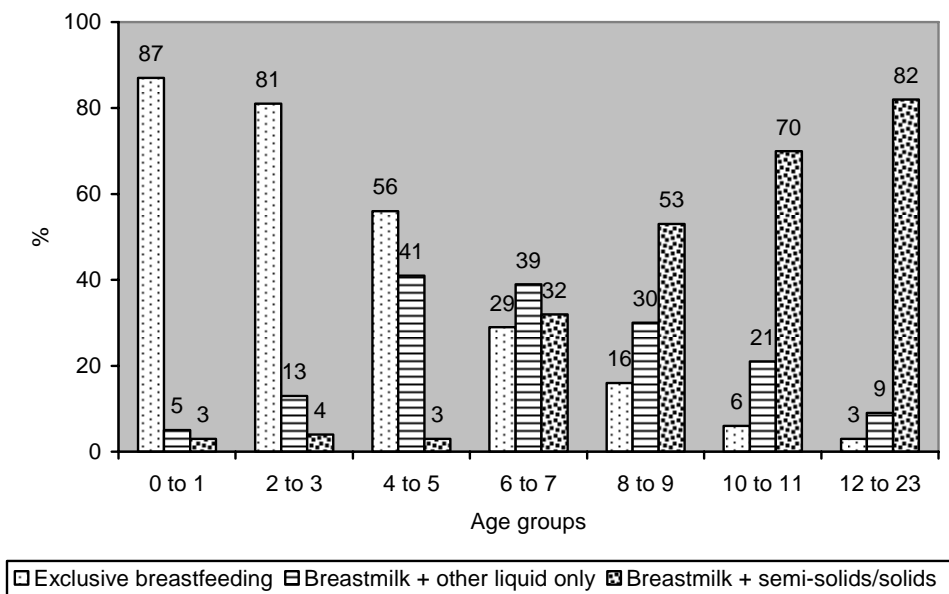
Graph 10: SNNPR: Percent of children exclusively breastfed, breastfed with other liquids, and breastfed with solids/semi-solid foods, from 0 to 23 months



SNNPR	0-1 mos %	2-3 mos %	4-5 mos %	6-7 mos %	8-9 mos %	10-11 mos %	12-23 mos %	0-23 mos N
Exclusive breastfeeding	81	53	40	12	8	10	0.2	854
Breastmilk plus other liquid only	16	34	36	37	18	24	11	854
Breast milk plus semi-solids/solids	1	11	22	49	73	61	75	854

As seen below in Graph 11, in Amhara 68%, 46% and 27% of infants between 6-7, 8-9, and 10-11 months of age, respectively, are still only receiving either breastmilk alone or with other liquids. By 10 months of age, only 70% were receiving complementary foods in addition to breastmilk. Thus, 30% are not receiving any solid or semi-solid foods.

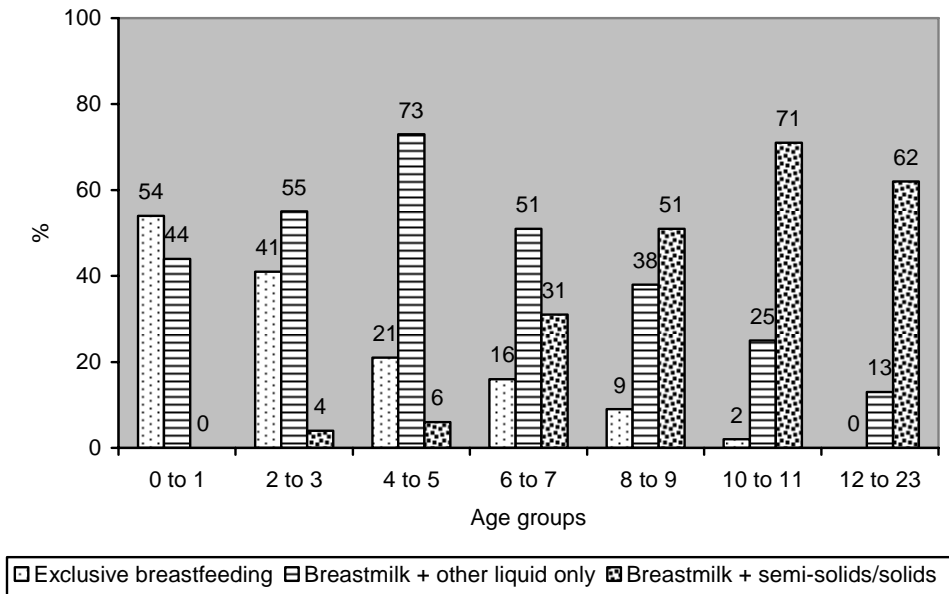
Graph 11: Amhara: Percent of children exclusively breastfed, breastfed with other liquids, and breastfed with solids/semi-solid foods, from 0 to 23 months



Amhara	0-1 mos %	2-3 mos %	4-5 mos %	6-7 mos %	8-9 mos %	10-11 mos %	12-23 mos %	0-23 mos N
Exclusive breastfeeding	87	81	56	29	16	6	3	598
Breastmilk plus other liquid only	5	13	41	39	30	21	9	598
Breast milk plus semi-solids/solids	3	4	3	32	53	70	82	598

As shown in Graph 12, Oromia is similar to Amhara with 67%, 47% and 27% of infants between 6-7, 8-9, and 10-11 months of age, respectively, still only receiving either breastmilk alone or with other liquids. By 10 months of age, 71% were receiving complementary foods in addition to breastmilk.

Graph 12: Oromia: Percent of children exclusively breastfed, breastfed with other liquids, and breastfed with solids/semi-solid foods, from 0 to 23 months



Oromia	0-1 mos %	2-3 mos %	4-5 mos %	6-7 mos %	8-9 mos %	10-11 mos %	12-23 mos %	0-23 mos N
Exclusive breastfeeding	54	41	21	16	9	2	0	597
Breastmilk plus other liquid only	44	55	73	51	38	25	13	597
Breast milk plus semi-solids/solids	0	4	6	31	51	71	62	597

It is clear that a major problem that needs to be addressed in all three regions is the late introduction of complementary feeding, and the heavy reliance on breast milk alone or with other liquids during the second half of infancy when complementary foods are needed to support adequate growth and health.

2.4 Feeding frequency of complementary foods

ENA Messages

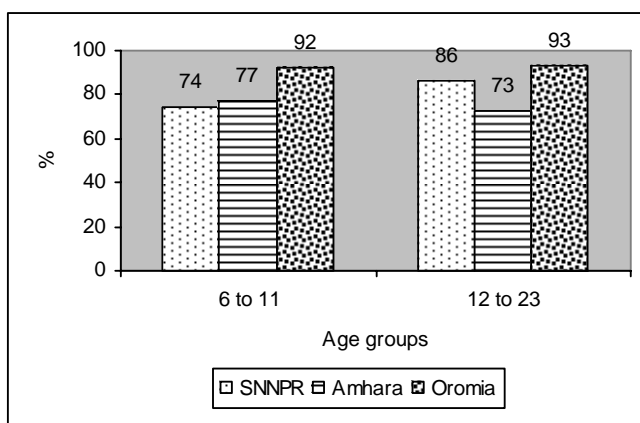
Infants 6-11 months: introduce complementary foods at six months of age, such as soft porridge, 2-3 times a day, for your baby to grow healthy and strong. Also feed your baby 1-2 other solid foods (*mekses*) each day to ensure healthy growth.

Children 12-23 months: feed your child at least 3-4 times a day using family foods, along with 1-2 other solid foods (*mekses*) each day to ensure healthy growth.

In Ethiopia, as in many other countries, it is problematic to determine feeding frequency especially in terms of what constitutes a 'meal' and what constitutes a 'snack' (*mekses*). In addition, the way in which data on meals and snacks, especially frequency of consumption, were collected in the ESHE II baseline survey was not consistent across the three regions. In Amhara region only data on meals was collected and snacks were omitted, whereas in Oromia and SNNPR data on both meals and snacks were collected. Thus in the present analysis, to allow comparability and avoid confusion, 24 hour recall data on the frequency of meals only, not snacks, was used. Based on the ENA complementary feeding messages, in order to analyze the baseline data the 'accepted minimum number of meals per day for infants 6-11 months was set at '2' times per day, and that for children 12-23 months set at '3' times per day.

As shown in Graph 13, in SNNPR and Amhara regions, only 74% and 77% respectively of children 6-11 months of age were reported to have eaten at least the minimum accepted number of 2 meals each day, as compared to 92% in Oromia. In older children 12-23 months of age, only 73% in Amhara were eating the accepted number of 3 meals each day, whereas in SNNPR and Oromia the levels were 86% and 93%, respectively. DHS data are not available for comparison.

Graph 13: Percent of children who ate at least the minimum number of meals per day (24 hour recall with mothers of infants 6-23 months)



Region	Age group	%	N
SNNPR	6 - 11	74	193
	12 - 23	86	393
Amhara	6 - 11	77	69
	12 - 23	73	280
Oromia	6 - 11	92	111
	12 - 23	93	279

2.5 Dietary Diversity

ENA Messages

Enrich your baby's porridge with 2 to 3 different types of foods at each meal (such as butter, oil, peanuts, meat, eggs, lentils, vegetables and fruits) for it to grow and get strong.

Find ripe orange/yellow fruits and vegetables or liver to feed your child to keep it healthy.

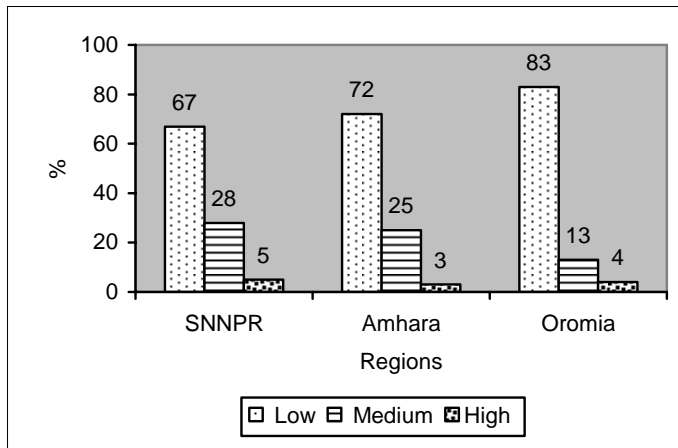
The ENA message on dietary diversity recommends that in addition to the baby's staple porridge, at a minimum at least 2 to 3 additional food groups should be eaten. Thus on a daily basis a young child should be eating 3 to 4 different types of foods each day. During the baseline surveys, 24 hour recall data were collected which focused on seven major food categories. The seven food groups are as follows:

- Animal milk (primarily cow milk)
- Vitamin A rich foods (fruit & vegetable sources)
- Other fruits & vegetables
- Meat, poultry, fish, eggs, cheese and yoghurt
- Legumes or nuts
- Grains, roots & tubers
- Oil, fat & butter

Graph 14 shows the level of dietary diversity, as measured by 24 hour recall, across the three regions. Dietary diversity was defined as 'low' for children who only ate foods from 0 to 2 food groups in the previous 24 hours, 'medium' for children who ate from 3 to 4 groups, and 'high' for children who ate from 5 to 7 groups.

Throughout ESHE II project areas dietary diversity for children 6-23 months was very low. The vast majority of children, 67-83%, ate 2 food groups or less (low diversity), 13-28% ate the recommended number of 3 to 4 food groups (medium diversity), and only 3-5% of children ate from 5 or more food groups (high diversity). Overall, Oromia is the worse for dietary diversity with 83% of children eating two food groups or less. SNNPR and Amhara are slightly better, but not by much, with 67% and 72% of children eating from only two food groups or less. These figures are similar to those obtained from an analysis with the DHS 2000 data set which showed 62% in the 'low' dietary diversity group, 31% in the 'middle' group, and 7% in the 'high' group (Arimond and Ruel 2003).

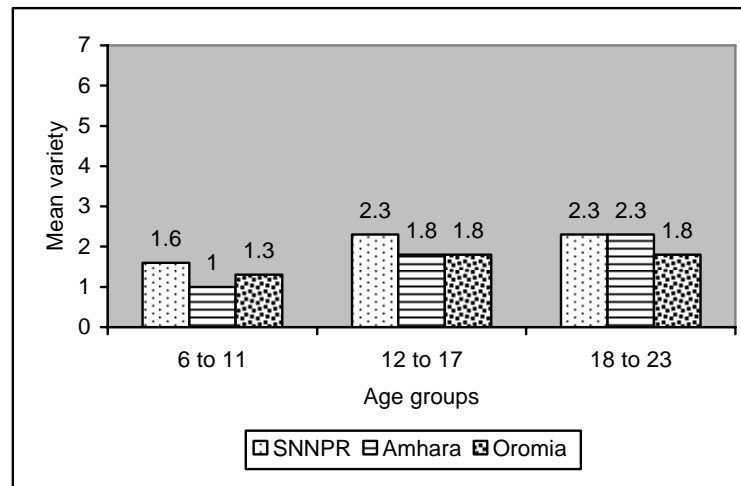
Graph 14: Dietary diversity (mothers with children 6-23 months)



Region	No. of food groups		
	0 – 2 low	3 – 4 medium	5 – 7 high
SNNPR (N= 633)	67%	28%	5%
Amhara (N= 403)	72%	25%	3%
Oromia (N= 444)	83%	13%	4%

Graph 15 shows the mean number of different types of groups, out of a total maximum value of 7, and out of the recommended number of foods being 3-4 per day, from which children ate in the previous 24 hours. For children 6-11 months, the mean number was very low, ranging from 1.0 to 1.6 across the three regions. This indicates that on average these older infants are only eating between 1 to 2 types of food each day, probably the staple food in addition just one other food. Similarly for children 12-17 months and 18-23 months, the mean only ranged from 1.8 to 2.3 across the three regions.

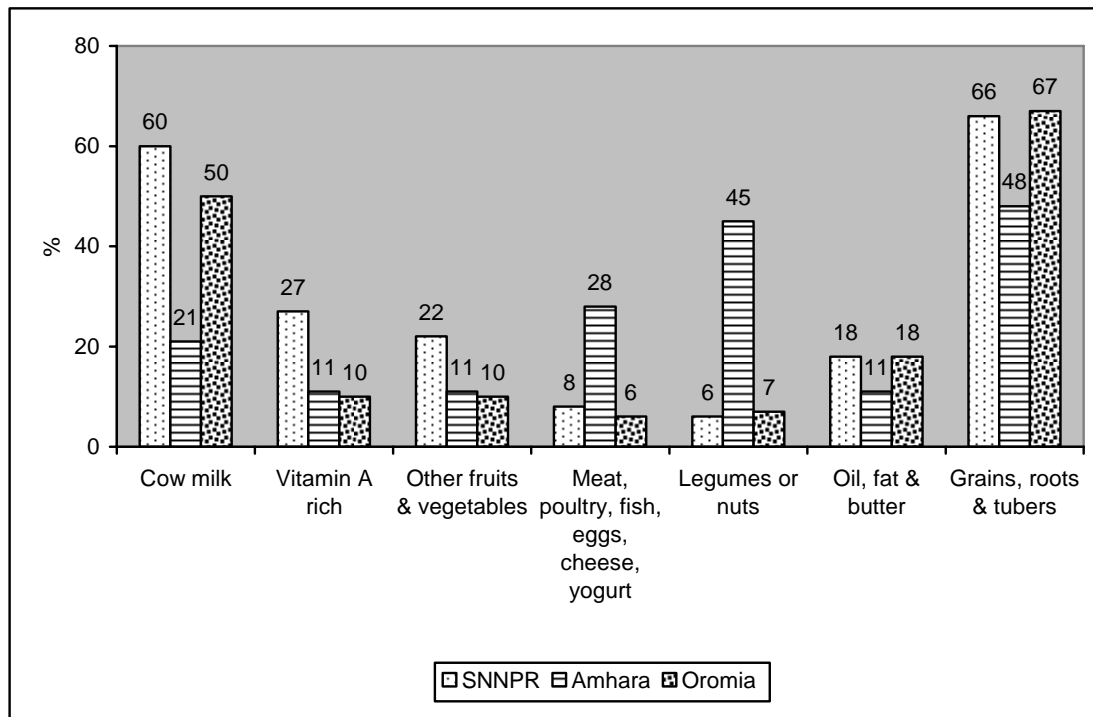
Graph 15: Mean number of different food groups fed to children 6-23 months, by age and region



Graph 16 shows the variation in the foods consumed by the children during the 24 hours preceding the survey across the three regions. As can be seen, in Amhara and Oromia there is very low consumption of Vitamin A rich foods as well as other fruits and vegetables. In SNNPR and Oromia there is very low consumption of meat, poultry and eggs. Grains, roots and tubers were eaten by two thirds of children in SNNPR and Oromia, and by nearly half in Amhara. Nearly half (45%) of all children in Amhara ate legumes and nuts, compared to only 6-7% in SNNPR and Oromia. Cow milk consumption was high in SNNPR (60%), and Oromia (50%), but low in Amhara (21%). Across all three regions, less than one quarter of children ate animal meats, fruits and vegetables or fatty foods the day before the survey.

The overall observation is that dietary diversity is extremely low across all three regions. Unfortunately it is not possible from the existing data to determine the relative importance of possible contributing factors such as cultural food habits leading to food aversions, lack of awareness of the importance of feeding a diverse diet, or limited family access to different foods groups due to high cost or lack of availability. Field experience, though, indicates that it is a mixture of all these factors.

Graph 16: Percent of children 6-23 months eating various food groups, by region



2.6 Child Feeding Practices Index

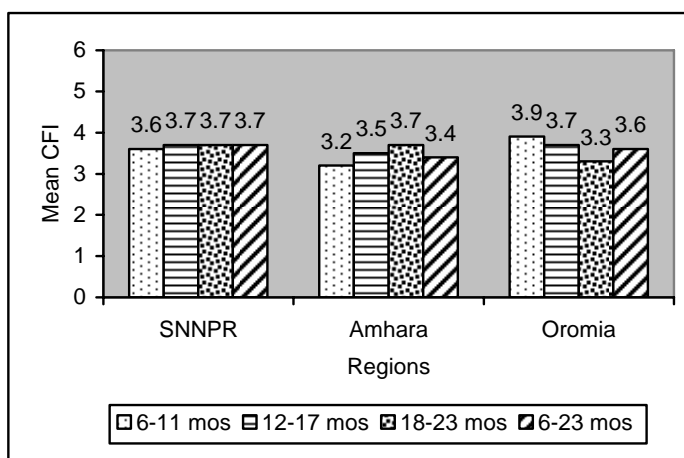
The original model to assess complementary feeding, described earlier, that was developed by Arimond and Ruel (2003) was adapted to the local ENA messages being promoted by AED-LINKAGES, ESHE II and their partners in Ethiopia. As can be seen below, for each of these three components of complementary feeding a scoring system has been devised that assigns high numerical values to 'optimal' feeding practices and low values to 'sub-optimal' practices.

Components and scoring of a 'child feeding index' CFI (children 6-23 months)	Scoring:	
Continued breastfeeding	No = 0 Yes = 2	
Frequency of feeding (number of meals in the last 24 hours)	6-11 months: None = 0 1-2 = 1 3+ = 2	12-23 months: 0-1 = 0 2-3 = 1 4+ = 2
Dietary diversity (number of food groups in the last 24 hours)	Low (0-2) = 0 Middle (3-4) = 1 High (5-7) = 2	

A CFI score is calculated for each child 6-23 months by summing up the individual values assigned to continued breastfeeding, frequency of feeding and dietary diversity, as shown in the model above. The minimum CFI score is "0" and the maximum is "6". A definition of "best" feeding practices is given only to those children 6-23 months who score a "6" on the CFI; that is, those who are still breastfed, are fed at least the minimum recommended number of times each day, and who score high for food group diversity.

Graph 17 shows the mean CFI scores by age and region. The mean score ranged from 3.4 to 3.7 (middle) across all three regions, far below the 'best' score of 6. There was also no consistent pattern of CFI and age in the three regions. However, in Amhara complementary feeding practices appear to improve in older children, while in Oromia region they appear to worsen. Overall, it appears that in Amhara the mean CFI value is slightly worse than the other two regions, particularly in the youngest age group (6-11 months) which may be due to extended exclusive breastfeeding in this region.

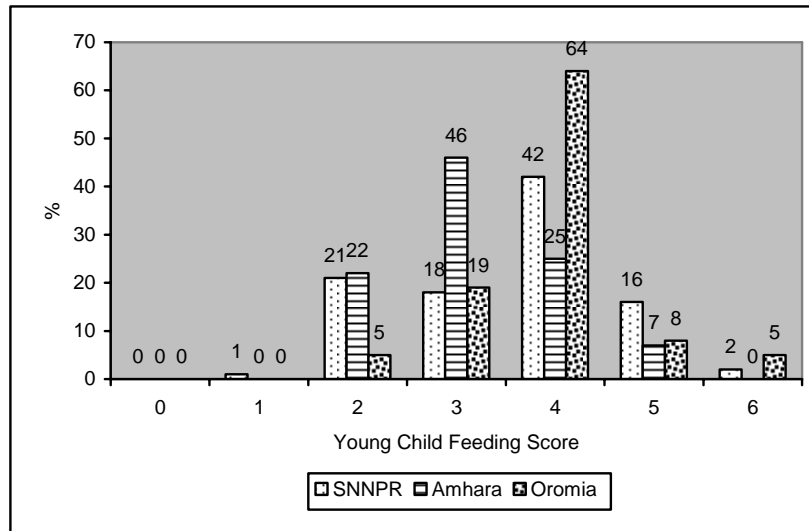
Graph 17: Mean CFI by age group and by region



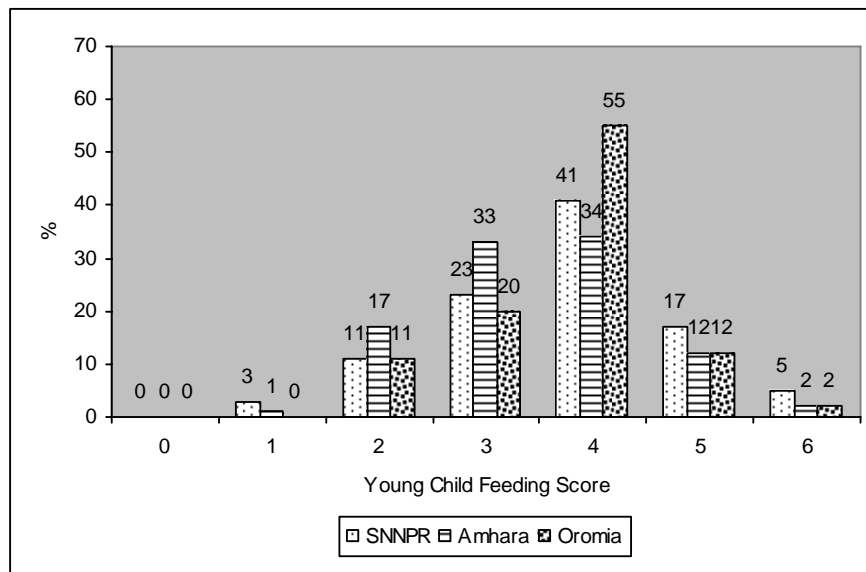
Region	Mean score (6-23 mos)	N
SNNPR	3.7	586
Amhara	3.4	340
Oromia	3.6	388
**F-test significant at p<.01		

Graphs 18 to 20 present the actual distribution of CFI for each region and age group, from the lowest CFI value of '0' to the highest value of '6'.

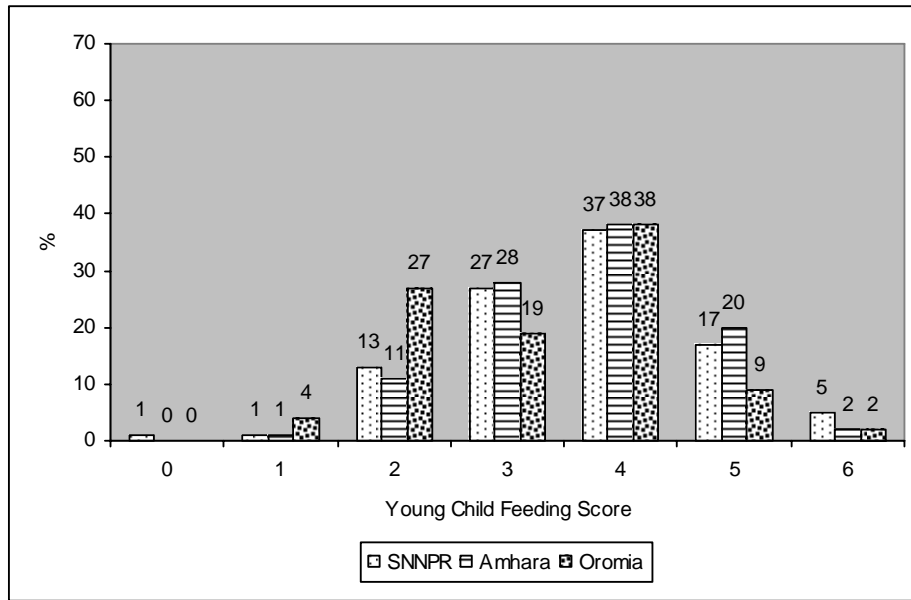
Graph 18: CFI for children 6-11 months



Graph 19: CFI for children 12-17 months

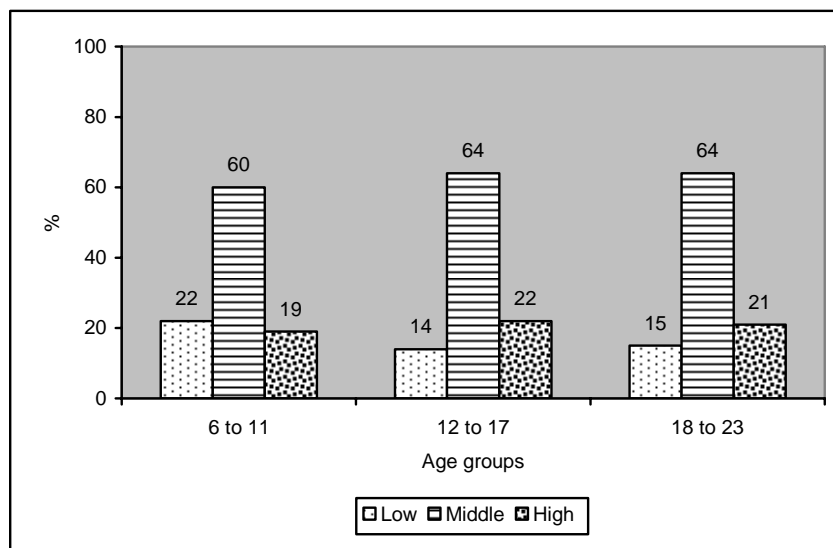


Graph 20: CFI for children 18-23 months

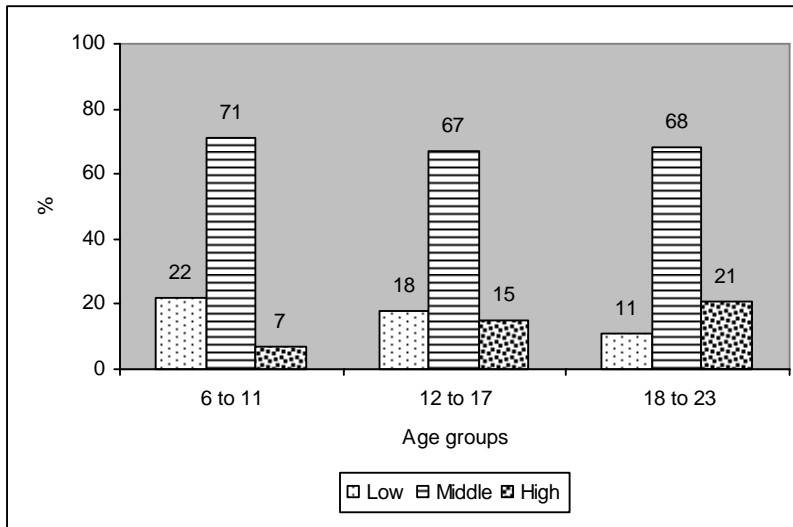


Graphs 21 to 23 show the distribution of CFI tertiles by age for each region separately. The CFI scores have been categorized into tertiles as follows: 5 to 6 defined as 'high', 3 to 4 defined as 'middle', and 0 to 2 defined as 'low'. As can be seen there is no distinctive change in the feeding practices as children get older in the SNNPR, however, there is a possible improvement with age in Amhara, as the low CFI score due to extended breastfeeding practices is less noticed. There also appears to be a worsening with age in Oromia region with more older children falling into the lowest CFI tertile with age

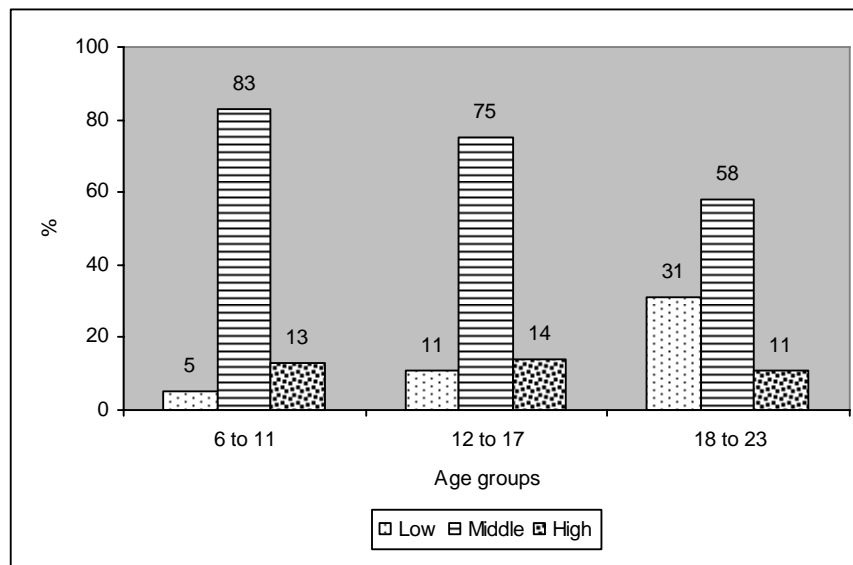
Graph 21: CFI tertile by age group for SNNPR (children 6-23 months)



Graph 22: CFI tercile by age group for Amhara (children 6-23 months)



Graph 23: CFI tercile by age group for Oromia (children 6-23 months)



'Best' Feeding Practices for Infants and Young Children

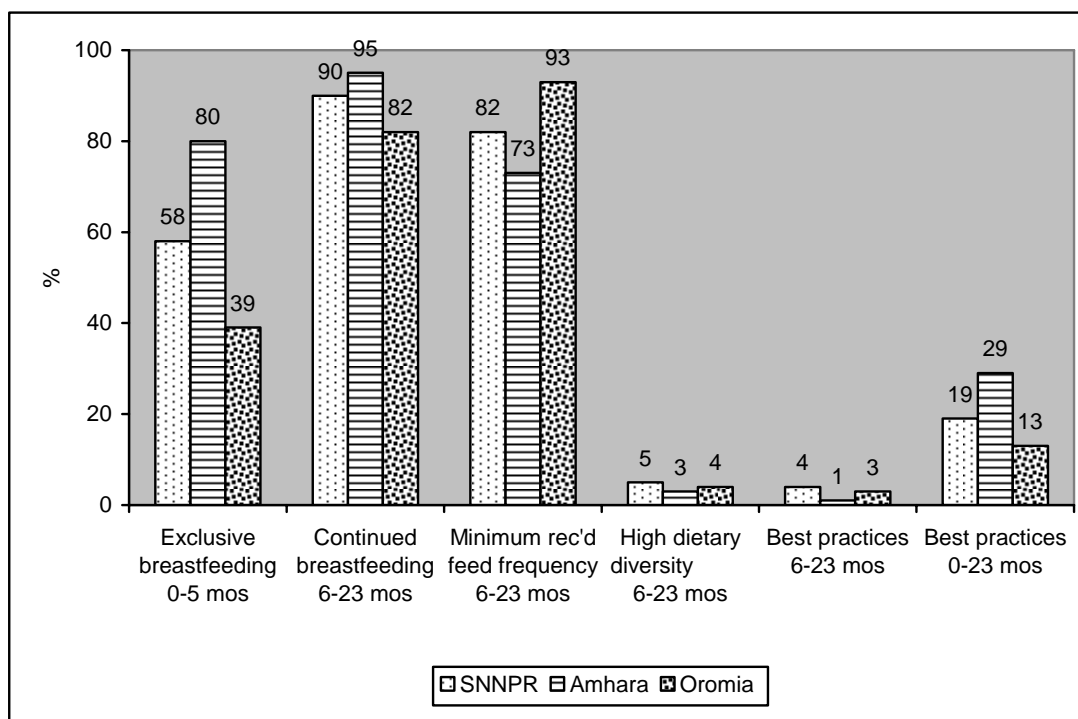
An summary overview is presented below in Graph 24 of the percentage of children 6-23 months classified as having the 'best' feeding practices, in other words a perfect CFI score of "6". As described earlier, a CFI score of "6" represents continued breastfeeding until 23 months, eating the age specific recommended number of times each day, as well as having acceptable dietary diversity. This age band can be extended to include infants to present the percentage of infants and young children 0-23 months with "best" feeding practices. As shown in Table 3 below, this is determined by calculating the percentage of children in both age groups with "best" feeding practices.

Table 3: Defining “best practices” for infants and young child feeding (ages 0-23 months)

Components and scoring of a “best” feeding practices in infants & children 0-23 months	Age group	
	0-5 months	6-23 months
Exclusive breastfeeding score	Yes = 1 (best) No = 0	
CFI score		6 = Yes = 1 (best) 0-5 = No = 0

As can be seen in Graph 24, very few children 6-23 months were being fed according to ‘best’ practices, 4% in SNNPR, 3% in Oromia, and 1% in Amhara. For infants and young children 0-23 months, the levels of “best” practices varied from a low value of 13% in Oromia to 19% in SNNPR to the highest value of 29% found in Amhara. It is clear that the rate of exclusive breastfeeding heavily influences the “best” feeding practices score for the 0-23 months old children, and thus obscures problems encountered with inadequate complementary feeding from 6 months onwards.

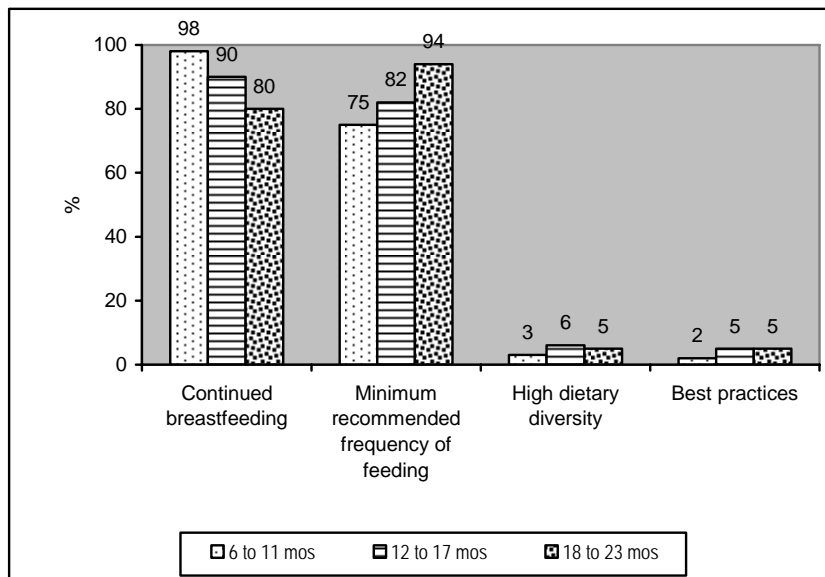
Graph 24: Proportion of “good feeding practices” for children 0-23 months of age per region



Graphs 25 to 27 show by region, the percentage of children 6-23 months who were being fed according to “best” feeding practices. Individual components of the CFI are also presented by age group, and replicate data shown in earlier tables. What is noteworthy is that the percent of children with “best” feeding practices is consistently low in each region across all age groups.

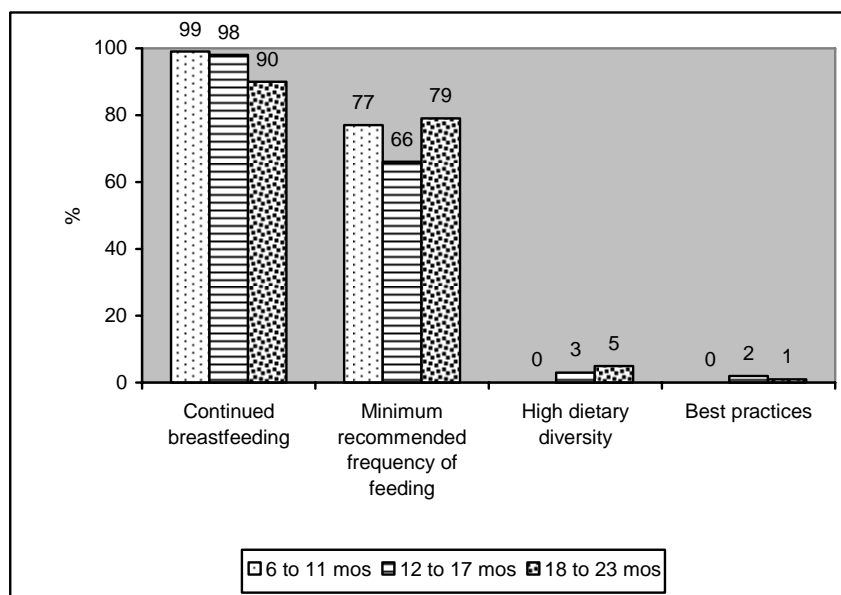
As shown below in Graph 25 in SNNPR the major problems for complementary feeding are clearly dietary diversity across all age groups, as well as discontinued breastfeeding in children especially at 18 months and older.

Graph 25: Percentage of children 6-23 months in SNNPR with “best” feeding practices



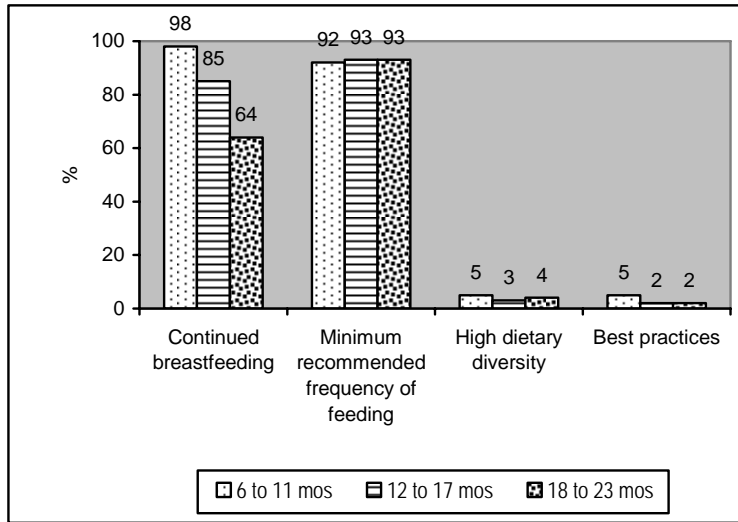
As shown in Graph 26 below, in Amhara the major problems are also low dietary diversity across all age groups, as well as inadequate feeding frequency.

Graph 26: Percentage of children 6-23 months in Amhara with “best” feeding practices



In Oromia, like the other two regions, low dietary diversity is a major problem, as is the sudden drop in children 18-23 months breastfeeding. Feeding frequency is not as critical issue as in the other two regions.

Graph 27: Percentage of children 6-23 months in Oromia with “best” feeding practices



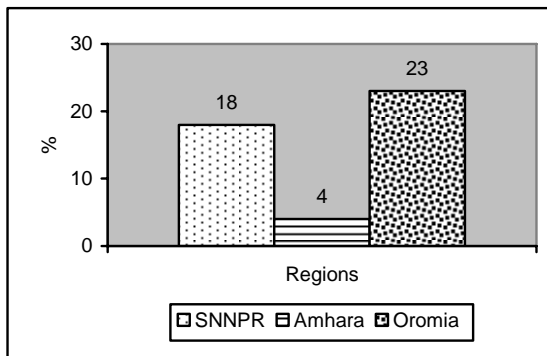
2.7 Bottle feeding

ENA Message

Feed your baby using a clean cup and spoon, never a bottle as this may cause your baby to get diarrhea.

As shown in Graph 28, as with younger infants, bottle feeding is very prevalent in older infants after 6 months of age. The levels of bottle use range from 23% in Oromia, 18% in SNNPR and 4% in Amhara.

Graph 28: Percent of children bottle-fed, by region (24 hour recall from mothers with children 6-23 months)



Region	6-23 mos %	N
SNNPR	18	614
Amhara	4	403
Oromia	23	442

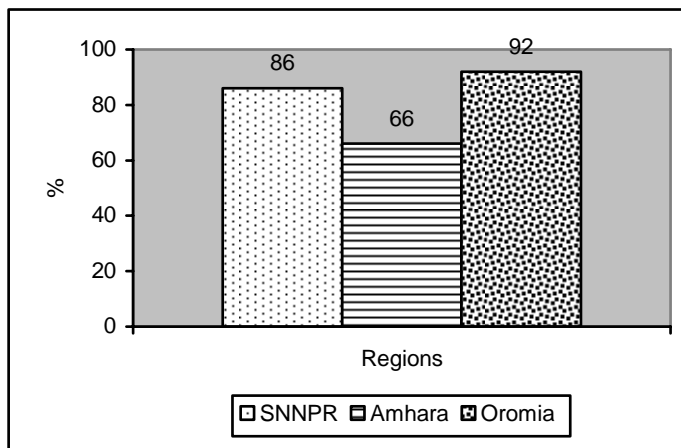
2.8 Hand Washing

ENA Message

Wash your hands with soap and water before preparing food, before eating, and before feeding young children to avoid diarrhea.

Hand washing is recommended as one means by which to improve the nutrition of young children through its effects on decreasing illness, particularly diarrhea. Graph 29 shows the proportion of mothers/caregivers who washed their hands before feeding their child, unfortunately it is not known whether soap was used. The percentage of mothers reporting that they 'washed' their hands before feeding their children was relatively high at 86% and 92% in SNNPR and Oromia regions, respectively, and lower at 66% in Amhara.

Graph 29: Proportion who washed their hands before feeding children (0-23 months)



Region	%	N
SNNPR	86	854
Amhara	66	599
Oromia	92	600

Conclusions on optimal complementary feeding with continued breastfeeding

from 6 to 23 months of age...

In summary, much work needs to be done to promote optimal practices related to complementary feeding with breastfeeding in children 6 to 23 months in all of the 3 regions. The major problems are as follows:

- In all 3 regions, the introduction of complementary foods is too late with only about 40-60% of children being given complementary foods in addition to breastmilk by their 10th month of life. In the DHS 2000, a similar figure of 57% was measured.
- Breastfeeding continues after six months of age, however, in Oromia 36% of children at 18 to 23 months of age are not breastfeeding, as compared to 9% and 20% in Amhara and SNNPR, respectively.
- Inadequate feeding frequency is a problem especially in SNNPR and Amhara in nearly 25% of children between 6 to 11 months of age. The situation improves in children 12 to 23 months of age with around 90% being fed an adequate number of meals each day in both SNNPR and Oromia, but still less than 75% in Amhara.
- Dietary diversity is very low across all 3 regions and age groups; comprising one of the major problems in regards to adequate complementary feeding. Dietary diversity was the lowest in Oromia, where as much as 83% of children ate from two or less food groups a day, as compared to 72% and 67% in Amhara and SNNPR, respectively.
- When continued breastfeeding, dietary diversity and feeding frequency is combined into the Child Feeding Index, less than 5% of children in any of the 3 regions are fed according to 'best' young child feeding practices.
- Bottle feeding is a major problem that places young children, particularly babies under 6 months, at high risk of mortality from diarrhea. Bottle feeding is highly prevalent in Oromia and SNNPR where 23% and 18%, respectively, of children 6-23 months of age are given a bottle. The comparative figure in Amhara is 4%.
- Hand washing by mothers before feeding their children is reported to be relatively high in all 3 regions, reaching between 66-92%, although the use of soap is not known.

3. Nutritional Care of the Sick Child

3.1 Child illness

Table 4: Child illness in the previous 2 weeks

Symptoms	SNNPR %	Amhara %	Oromia %
cough	57	35	33
rapid breathing	39	24	15
fever	76	59	43
diarrhea	58	64	59
other		36	
(N)	(365)	(226)	(217)

Mothers were asked if their children had experienced any illness in the two weeks prior to the baseline surveys. A very large percentage of children were reported as having been sick, 36% in Oromia, 38% in Amhara, and 43% in SNNPR. The most common symptoms are presented in Table 4 with diarrhea (58-64%) and fever (43-76%), with the latter being especially prevalent in SNNPR.

3.2 Breastfeeding infants 0-5 months during and after illness

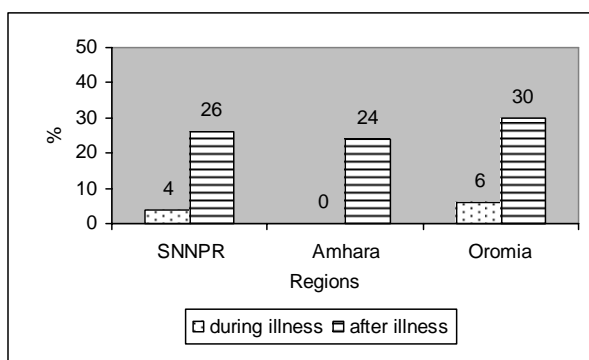
ENA Messages

During illness, increase the frequency of breastfeeding for your baby to recover faster

After each illness increase the frequency of breast feeding for the baby to regain health and weight.

As indicated in Graph 30, very few mothers with infants under 6 months of age reported that they breastfed more frequently during illness in SNNPR (4%), Amhara (0%), and Oromia (6%), respectively. Formative research has shown that some mothers believe that breastfeeding may exacerbate diarrhea, hence this could contribute to the avoidance of breastfeeding. The proportion breastfeeding more frequently after illness is much higher at 26% in SNNPR, 24% in Amhara, and 30% in Oromia.

Graph 30: Percentage of mothers who breastfed more during and after illness for children 0-5 months (of children reported to be ill during the previous two weeks)



During illness	SNNPR N=74	Amhara N=48	Oromia N=36
	%	%	%
Breastfed less	66	33	47
Breastfed about the same	28	65	47
Breastfeed more than usual	4	0	6
Did not	2	2	0

After illness	SNNPR N=45	Amhara N=21	Oromia N=10
	%	%	%
Breastfed less	3	5	0
Breastfed about the same	71	71	70
Breastfeed more than usual	26	24	30
Did not breastfeed	0	0	0

3.3 Feeding children 6-23 months during and after illness

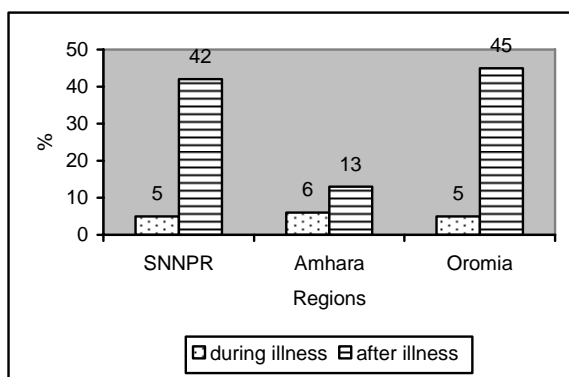
ENA Messages

During illness, increase the frequency of breastfeeding and offer additional food to your child to help it recover faster.

When your child has recovered from an illness, give it one additional meal of solid food each day during the two weeks that follow to help it recover quickly.

A similar pattern is found in breastfeeding children 6-23 months during and after illness. As shown in Graph 31 below, across all three regions only 5-6% of mothers with children 6-23 months of age breastfed more during illness. After illness, between 40-45% of mothers breastfeed more after illness in SNNPR and Oromia, but the level was only 13% in Amhara, despite the high rates of breastfeeding found in this region.

Graph 31: Percentage of mothers who breastfed more during and after illness for children 6-23 months (of children reported to be ill during the previous two weeks)



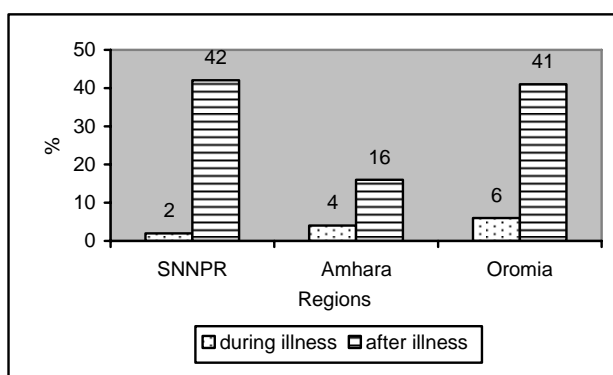
During illness	SNNPR N=74	Amhara N=48	Oromia N=36
	%	%	%
Breastfed less	66	33	47
Breastfed about the same	28	65	47
Breastfed more than usual	4	0	6
Did not breastfeed	2	2	0

During illness	SNNPR N=291	Amhara N=177	Oromia N=181
	%	%	%
Breastfed less	64	27	55
Breastfed about the same	24	63	26
Breastfed more than usual	5	6	5
Did not breastfeed	7	4	14

After illness	SNNPR N=158	Amhara N=103	Oromia N=71
	%	%	%
Breastfed less	4	3	3
Breastfed about the same	49	79	41
Breastfed more than usual	42	13	45
Did not breastfeed	5	5	11

Similar findings, see Graph 32, exist for the amount of food given to children 6-23 months of age during and after illness. Across all regions only 2-6% of mothers gave more food to their children during illness, possibly as a result of the anorexia caused by illness or local beliefs that it is not good to feed solids to sick children. After illness about 40% of mothers in SNNPR and Oromia feed their child more, however, only 16% of mothers in Amhara do so.

Graph 32: Percentage of mothers who reported feeding more during and after illness for children 6-23 months



During illness	SNNPR N=291	Amhara N=162	Oromia N=181
	%	%	%
Less than usual	70	22	64
Same as usual	7	67	20
More than usual	2	4	6
Nothing to eat	21	7	10

After illness	SNNPR N=147	Amhara N=91	Oromia N=71
	%	%	%
Less than usual	14	3	15
Same as usual	44	81	41
More than usual	42	16	41
Nothing to eat	0	0	3

Conclusions on nutritional care of the sick child 0-23 months of age

In all 3 regions, many children, about 40%, were reported to have been sick during the two weeks preceding the survey. During each illness a child loses weight and is more likely to become malnourished. In the 3 regions, sub-optimal feeding practices during and after illness contribute to the growth faltering seen early in the first year of life and to the high rates of malnutrition. Promotion of breastfeeding during illness and breastfeeding and feeding after illness are key messages to improve young child nutrition.

0 to 5 month old children:

- During an illness, 0-6% were breastfed more than usual and 33-66% were breastfed less than usual
- After an illness, 24-30% were breastfed more than usual and 0-5% were breastfed less than usual

6 to 23 month old children:

- During an illness, 5-6% were breastfed more than usual and 27-64% were breastfed less than usual
- During illness only 2-6% of mothers fed complementary foods more than usual and 22-70% fed less than usual
- After an illness only 13% of mothers in Amhara breastfed more than usual, as compared to 42% and 45% in SNNPR and Oromia, respectively
- After an illness, only 16% of mothers in Amhara fed complementary foods more than usual, as compared to about 40% in SNNPR and Oromia

4. Control of Vitamin A Deficiency

4.1 Vitamin A supplementation and food diversification for children 6 months and older

ENA Message

When your baby is 6 months old, make sure it receives Vitamin A supplementation every six months to make it strong.

Find ripe orange/yellow fruits and vegetables or liver to feed your child to keep it healthy.

As shown in Table 5, nearly 40% of children aged 6-23 months had received vitamin A supplementation during the 6 months prior to the ESHE II baseline survey in Oromia, while the figures were only 8% and 14% in Amhara and SNNPR regions, respectively. The relatively high coverage in Oromia appears to be due to a one-time measles campaign conducted in the region which included vitamin A supplementation for children.

Table 5: Percentage of children 6-23 months² who receive vitamin A supplementation

Region	%	N
SNNPR	14	627
Amhara	8	112
Oromia	39	441

In addition to vitamin A supplementation in young children, ENA messages also promote the consumption of vitamin A rich foods (e.g. pumpkins, carrots, red sweet potatoes, green leafy vegetables, mangos, papaya and liver) in the diet. As shown earlier in Graph 16, in SNNPR, Amhara and Oromia, only 27%, 11% and 10% of children 6-23 months consumed such foods in the 24 hours preceding the ESHE II baseline survey.

4.2 Post partum vitamin A supplementation for women

ENA Message

Take Vitamin A supplementation within 45 days of delivery for the baby's health and strength.

As shown in Table 6 only 4%, 2% and 8% of women have received Vitamin A capsule within 45 days post partum in SNNPR, Amhara and Oromia, respectively.

Table 6: Percentage of women who received post-partum vitamin A supplementation

Region	%	N
SNNPR	4	428
Amhara	2	295
Oromia	8	300

Conclusions on control of vitamin A deficiency ...

Coverage of vitamin A supplementation is low for both children as well as post-partum women. Consumption of foods rich in vitamin A or its pre-cursors is also low, hence much work will be needed in to improve the situation in the 3 regions as vitamin A deficiency is a major contributor to child morbidity and mortality..

- Whereas upwards to nearly 40% of children 6-23 months in Oromia had received a vitamin A supplement in the previous 6 months (because of a measles mass campaign that included vitamin A), only 8% and 14% of children in Amhara and SNNPR had been reached.
- Consumption of foods rich in vitamin A and its precursors is low.
- Post-partum vitamin A reaches only 8% of women in Oromia, and 2% and 4% in Amhara and SNNPR, respectively.

5. Control of Anemia

ENA Message

Make sure your pregnant wife gets iron/folate tablets to maintain her strength during the pregnancy.

As shown in Table 7, attendance at antenatal clinics was low for all women, ranging from 28% in Oromia, to 45% in Amhara and 48% in SNNPR. Of those that attended, only 20-38% received iron/folate supplements. Thus, out of all pregnant women included in the survey, only 13%, 17% and 6% in SNNPR, Amhara and Oromia, respectively, received iron/folate supplements during their last pregnancy.

Table 7: Antenatal care attendance and iron/folate supplementation

Region	% attending ANC	% received iron/folate from ANC attendants	% received iron/folate from the total
SNNPR (N = 428)	48	27	13
Amhara (N = 300)	45	38	17
Oromia (N = 300)	28	20	6

ENA Message

Sleep under a insecticide treated net (INT), especially pregnant women and children, to prevent getting sick with malaria.

Table 8: Percentage of children sleeping under an ITN (0-23 months)

Region	%
SNNPR (N=854)	0.5
Amhara (N=598)	5.0
Oromia (N=597)	2.2

Sleeping under insecticide treated nets (ITN) is part of the ESHE II strategy to prevent malaria and also to control anemia in infants, young children as well as pregnant and lactating women. However, during the ESHE II baseline survey, pregnant or lactating women were not asked if they had slept under an ITN. For children, only 0.5%, 5% and 2.2% slept under ITNs the night before the survey in SNNPR, Amhara, and Oromia regions, respectively.

Conclusions on control of anemia ...

Anemia is prevalent in Ethiopia in all parts of the population. The means by which to control anemia includes iron/folate supplementation and malaria control. De-worming is another strategy, however, this program was not assessed in the baseline surveys.

The findings from the baseline indicate that much improvement is needed to prevent and treat anemia.

- Attendance at ante-natal clinics varied across regions, from the lowest of 28% in Oromia, to 45% and 48% in Amhara and SNNPR, respectively. However, few of the women attending ante-natal clinics were ever given iron/folate, resulting in only 6%, 13% and 17% of all pregnant women in Oromia, SNNPR and Amhara, respectively, actually receiving iron/folate during their last pregnancy
- ITN use was low in children, ranging from 0.5% to 5%; data on women was not collected.

6. Women's Nutrition

A woman who is pregnant or lactating needs special nutrition care to maintain her own health and nutrition and that of her unborn baby. As shown in Table 9, less than one third of pregnant women in SNNPR and Oromia received information on maternal nutrition during their pregnancy, while only 11% received such advice in Amhara.

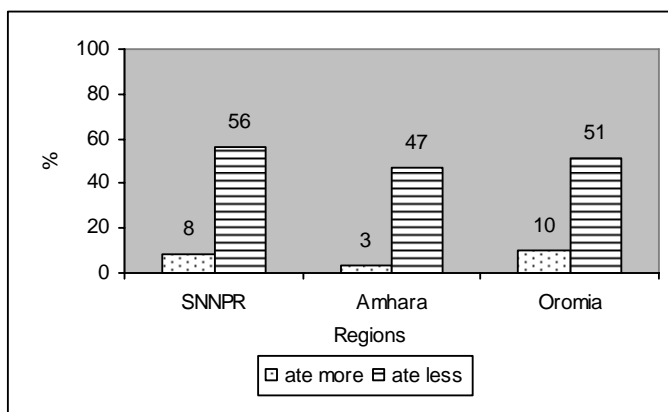
	%	N
SNNPR	28	204
Amhara	11	300
Oromia	30	84

ENA Message

Ensure that your pregnant wife has one additional meal every day to maintain her strength.

As shown in Graph 33, the proportion of women who said that they ate more than usual during pregnancy was very low, only 8%, 3% and 10% for SNNPR, Amhara and Oromia regions, respectively. Formative research conducted by AED-LINKAGES on women's nutrition revealed that pregnant women worried that eating more during pregnancy will lead to a big baby and a difficult delivery⁵. As shown in the graph, between 47-56% of the women, in fact, reported that they ate less than usual during their last pregnancy which further illustrates the practice of pregnant women 'eating down' to avoid a big baby.

Graph 33: Proportion of women saying they ate more or less than usual when pregnant (for women with children 0-11 months)



Region	% who ate more	% who ate less	N
SNNPR	8	56	428
Amhara	3	47	300
Oromia	10	51	299

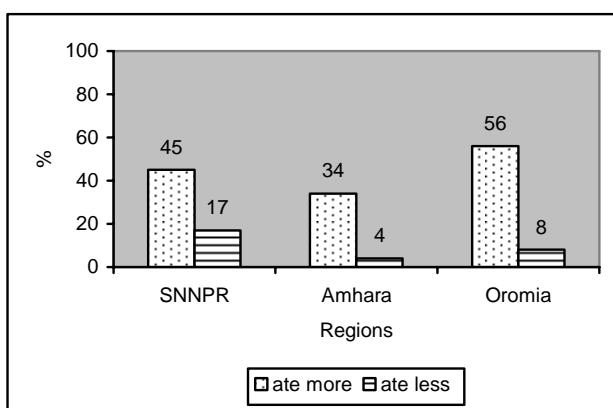
⁵ LINKAGES/Ethiopia formative research report on 'Women's Nutrition: Beliefs and Practices during Pregnancy and Lactation including for HIV Positive Women. Findings from Dilla, Jimma & South Gondar, Academy for Educational Development, Washington DC. July 2004

ENA Message

Ensure that your wife who is breastfeeding has two extra meals a day to maintain her health and the health of the baby

Findings show better maternal nutritional practices during lactation as 56% of mothers in Oromia ate more than usual during lactation, followed by SNNPR at 45% and Amhara at 34% as shown in Graph 34.

Graph 34: Proportion of women saying they ate more during lactation (for women with children 0-11 months)



Region	% who ate more	% who ate less	N
SNNPR	45	17	422
Amhara	34	4	310
Oromia	56	8	294

Conclusions on women's nutrition ...

Nutritional practices of women during pregnancy and lactation are sub-optimal and in need of major improvement.

- Few women, 11% in Amhara, 28% in SNNPR and 30% in Oromia, received advice on maternal nutrition during their last pregnancy
- The majority of pregnant women, between 47-56%, ate less than usual during pregnancy, most likely related to the common belief to avoid having a big baby and a difficult delivery
- Nutritional practices during lactation were better, with 34% of women in Amhara, 45% in SNNPR, and 56% in Oromia reporting that they ate more than usual during lactation

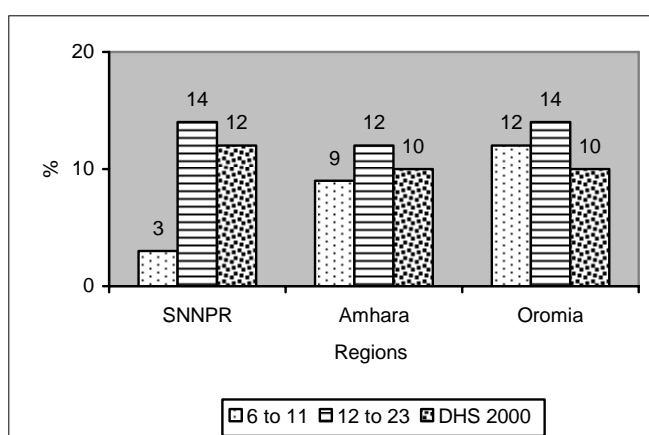
7. Child Anthropometry

Anthropometric data were collected for children 6-23 months. It should be noted that the DHS 2000 collected anthropometric data from children 0-59 months, thus making comparisons with the ESHE II baseline data difficult.

7.1 Levels of wasting, underweight and stunting

In the three regions, the prevalence of nutritional wasting, a sign of acute malnutrition, ranged from 3% to 12% in younger children 6-11 months, and from 12-14% in children 12-23 months. These levels of wasting from the ESHE II baseline are high and not unlike levels found in the DHS 2000 data, indicating either a problem of too little food, perhaps due to a seasonal food shortfall, or to high disease levels.

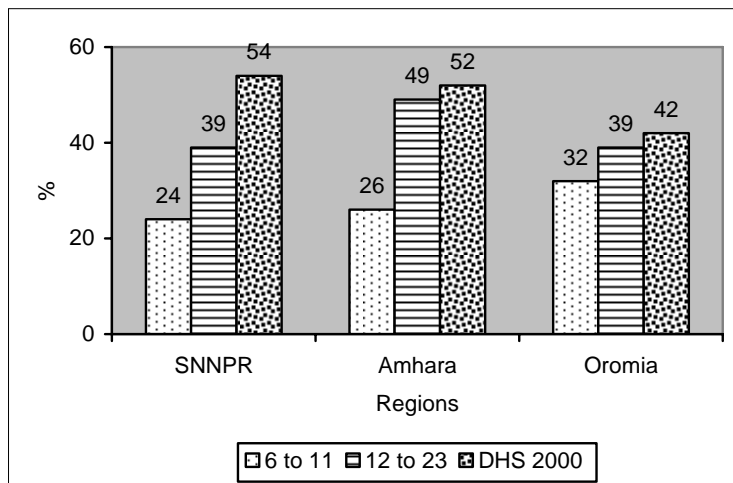
Graph 35: Wasting in children, by region and age (weight for height SD-score below -2.0)



Wasting, by Region	Age (in months)	% below -2 S.D. scores	% below -3 S.D. scores	N
SNNPR	6-11	3	1	207
	12-23	14	1	426
	6-23	11	1	633
DHS 2000 SNNPR	0-59	12	na	2,237
Amhara	6-11	9	1	117
	12-23	12	1	286
	6-23	11	1	403
DHS 2000 Amhara	0-59	10	na	2,712
Oromia	6-11	12	2	144
	12-23	14	3	290
	6-23	14	3	434
DHS 2000 Oromia	0-59	10	na	4,288

The prevalence of underweight is shown in Graph 36. A high percentage of younger children, 6-11 months were underweight, ranging from 24-32% across the three regions. Underweight becomes more prevalent in older children 12-23 months, ranging from 39-49% across the three regions with the highest rate in Amhara.

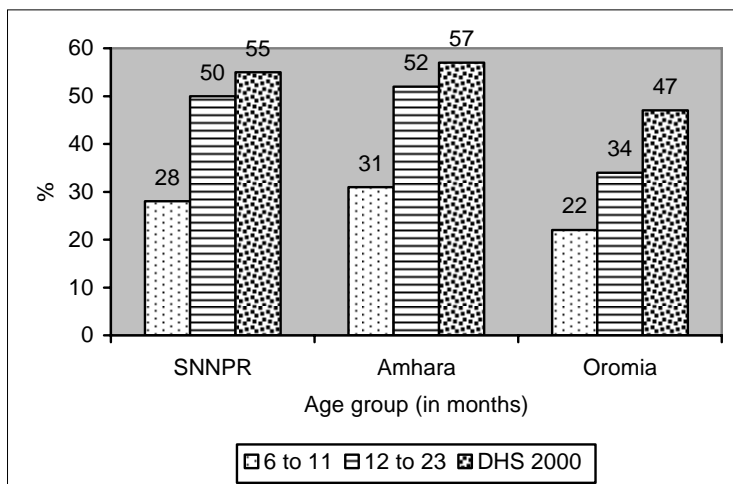
Graph 36: Underweight in children by region and age (weight for age SD-score below -2.0)



Underweight, by Region	Age (in months)	% below -2 S.D. scores	% below -3 S.D. scores	N
SNNPR	6-11	24	4	207
	12-23	39	14	426
	6-23	34	11	633
DHS 2000 SNNPR	0-59	54	na	2,237
Amhara	6-11	26	8	117
	12-23	49	9	286
	6-23	42	9	403
DHS 2000 Amhara	0-59	52	na	2,712
Oromia	6-11	32	9	144
	12-23	39	12	297
	6-23	37	11	441
DHS 2000 Oromia	0-59	42	na	4,288

Data on child stunting, an indication of long term nutritional conditions are shown in Graph 37. As can be seen, levels of stunting are high, between 22-31% across all three regions in children 6-11 months, and between 34-52% in older children 12-23 months. The DHS figures are higher than the ESHE II figures as the DHS sample included children 24-59 months, an age group where stunting is at its highest.

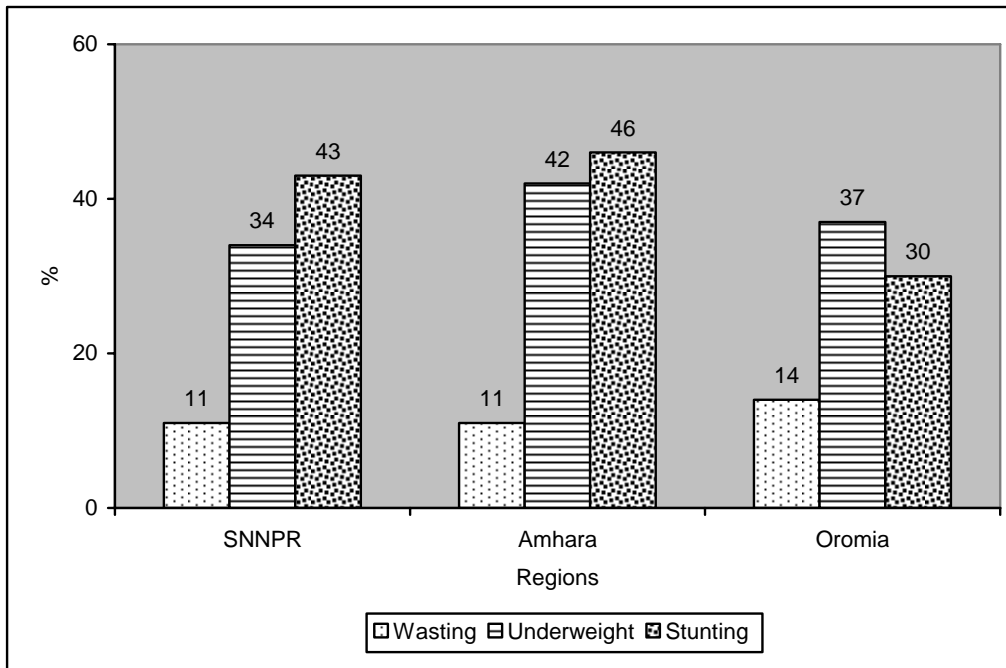
Graph 37: Stunting in children by region and age (height for age SD – score below -2.0)



Stunting by Region	Age (in months)	% below -2.0 SD scores	% below -3.0 SD scores	N
SNNPR	6-11	28	10	207
	12-23	50	22	426
	6-23	43	18	633
DHS 2000 SNNPR	0-59	55	na	2,237
Amhara	6-11	31	10	117
	12-23	52	25	286
	6-23	46	21	403
DHS 2000 Amhara	0-59	57	na	2,712
Oromia	6-11	22	8	144
	12-23	34	13	294
	6-23	30	11	438
DHS 2000 Oromia	0-59	47	na	4,288

Graph 38 below, presents the summary data from the ESHE II baseline on children 6-23 months combined for each anthropometric indicator by region. As can be seen, malnutrition rates are high across the three regions, however, stunting levels in Oromia (30%) may be slightly less than those found in SNNPR (43%) and Amhara (46%).

Graph 38: Summary of baseline child malnutrition levels in ESHE II project areas, by region and sex (6-23 months)



Levels of child malnutrition ...

Childhood malnutrition begins with growth faltering early on during the first year of life, and reach very high levels by the end of the second year of life. Although levels are very high across all 3 regions, there are some variations.

- Wasting levels are high in all three regions, ranging from the lowest of 11% in SNNPR and Amhara to the highest of 14% in Oromia
- Underweight affects 34-37% of children in SNNPR and Oromia, and over 42% in Amhara
- Stunting levels are highest in Amhara at 46%, followed by 43% in SNNPR and 30% in Oromia.

C. Conclusions

The results of the ESHE II baseline data analysis underscore that major improvements are needed in all Essential Nutrition Action practices, spanning infant and young child feeding practices, women's nutrition practices, as well as in micronutrient nutrition. These findings also confirm similar findings observed in the DHS 2000 as well as in AED-LINKAGES' formative research studies. AED-LINKAGES will use the results of the ESHE baseline to further refine and focus its advocacy as well as field work on those issues that appear the most pressing, including early initiation of breastfeeding, exclusive breastfeeding 0-5 months, and then continued breastfeeding to 2 years, discouraging bottle use, timely introduction of complementary foods at 6 months, adequate food diversity and quantity, good nutritional care of the sick child, as well as nutrition support to pregnant and lactating women.

Annex 1: Definitions of Key IYCF Indicators

Timely Initiation Of Breastfeeding (TIBF): Percentage Of Infants 0-< 12 Months Who Were Put To The Breast Within One Hour Of Delivery	
Definition	This indicator measures the timely initiation of breastfeeding after delivery. It is calculated as: $\frac{\text{\# of infants 0<12 months put to breast w/in 1 hour of delivery}}{\text{Total \# of infants 0<12 months}} \times 100$
Numerator	The number of infants less than 12 months old who were put to breast within 1 hour of delivery.
Denominator	The total # of infants less than 12 months old.
Data Requirements	A recall of initiation of breastfeeding after delivery of infants less than 12 months of age.
What it Measures	TIBF is defined by the following criteria: 1. The infant is less than 12 months old, and 2. The infant was put to breast within 1 hour of delivery.
How to Measure It	See sample survey with questions needed to calculate the rate.

Exclusive Breastfeeding Rate (EBR): Percentage Of Infants 0-<6 Months of Age Who Are Exclusively Breastfed	
Definition	Proportion of infants aged 0-<6 months of age who are being exclusively breastfed. This means that the infant received only breastmilk, and no other liquids or solids including water. Infants are, however, allowed to have drops of vitamins/minerals/ medicines. ⁶ $\frac{\text{\# of infants 0-<6 months exclusively breastfed}}{\text{Total \# of infants 0-<6 months}} \times 100$ <p>This equation may be modified to calculate rates for one-month intervals. The month-interval in the numerator should match the month-interval in the denominator.</p>
Numerator	The number of infants less than 6 months old exclusively breastfed.
Denominator	The total # of infants less than 6 months old.
Data Requirements	A 24-hour recall of food consumption of infants less than 6 months of age.
What it Measures	EBR is defined by three criteria: 1. The infant is less than 6 months old, and 2. The infant was breastfed in the previous 24 hours, and 3. The infant received no other liquids or solids, including water, in the previous 24 hours.
How to Measure It	See sample survey with questions needed to calculate the rate. The EBR calculator allows you to insert DHS EBR data (provided in 2-month intervals) from which the under 6 month EBR will be automatically calculated.

⁶ This is the WHO definition of exclusive breastfeeding, 1991, adopted thereafter by international agencies, including USAID.